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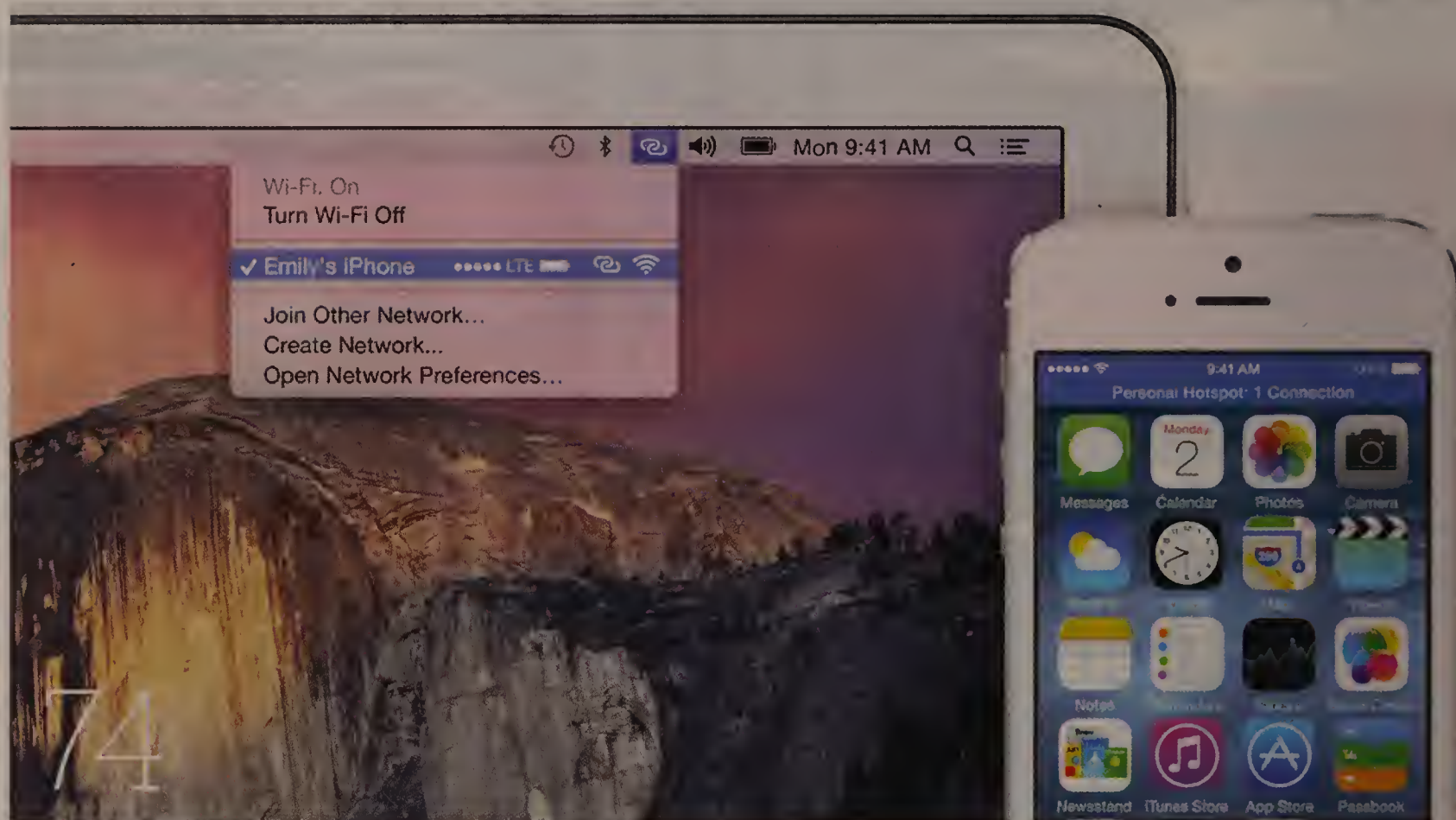
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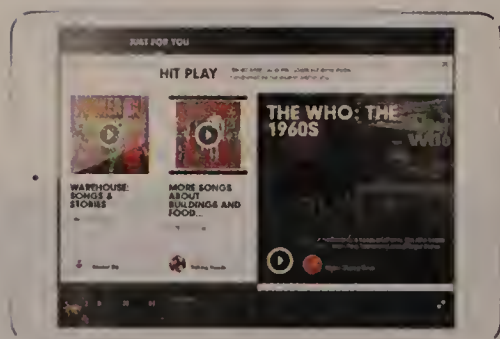
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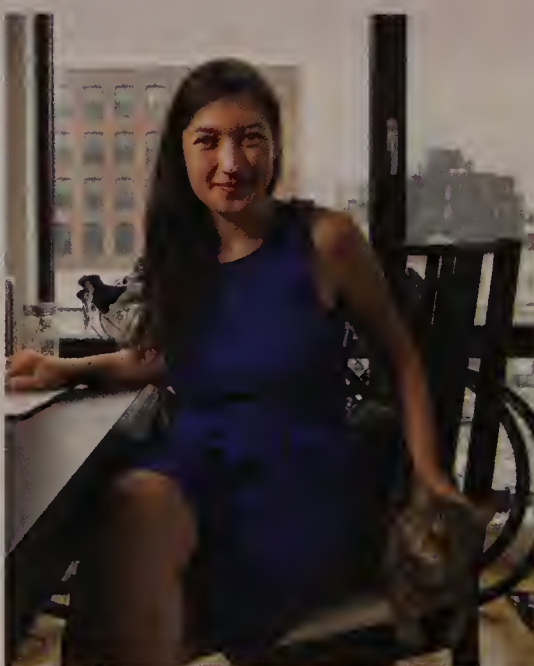
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Video: Tagging in iTunes

Kirk McElhearn explains how to tag songs in your iTunes library (go.macworld.com/tagitunes).

We also recommend:

Video: Tricks for managing printers in OS X (go.macworld.com/printtrick).

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A Tale of Two Apples

How Apple follows Steve Jobs's lead by not following it.

Tim Cook's instruction from Steve Jobs was clear: Don't let Apple become paralyzed like Disney did in the wake of Walt Disney's death, endlessly asking how the esteemed founder would react in any given situation. The only directive from Jobs's tenure that mattered after his death was the one that freed Cook and everyone else at Apple from playing "What Would Steve Do?"

Criticism of post-Jobs Apple tends to run in one of two directions: Either Apple is doomed because it's slavishly following the old playbook of its former CEO, or it's doomed because it *isn't* following the playbook of its genius former CEO.

As a close observer of Apple before, during, and after Jobs's tenure, I can tell you that the Apple of today is *not* playing by the Steve Jobs playbook—except for the bit that demanded that everyone stop asking what Steve would do. Tim Cook and his lieutenants are immersed in the Apple culture that Steve Jobs created, of course, but they're applying the culture to an ever-changing world.

WE GOT THE BEATS

Take Apple's \$3 billion acquisition of Beats. Apple bought plenty of companies during Jobs's run, but most of them were below-the-waterline businesses that Apple broke up for their component parts, integrating their employees into the Apple workforce. Beats, in contrast, is an existing name that will presumably continue—forcing Apple to steward another customer-facing brand for the first time in recent memory.

Jobs was famously disdainful of the concept of music subscription services. Were he alive today, even he might change his mind on that point, but since he's not here, it's up to Cook, Eddy Cue,



Tim Cook and his lieutenants are immersed in Apple culture, but they're applying it to an ever-changing world.

Phil Schiller, and the rest of Apple's brain trust to make such calls. Beats Music, though new and small, is an excellent service with smart curation features. It gets Apple in the game.

Then there's Beats Electronics. We can debate the quality of its headphones, but they are successful and cool. By buying Beats, not only does Apple get to influence the future of a popular product (and ensure that it works best with Apple's latest stuff), but the company also keeps its competitors' grubby mitts off of it.

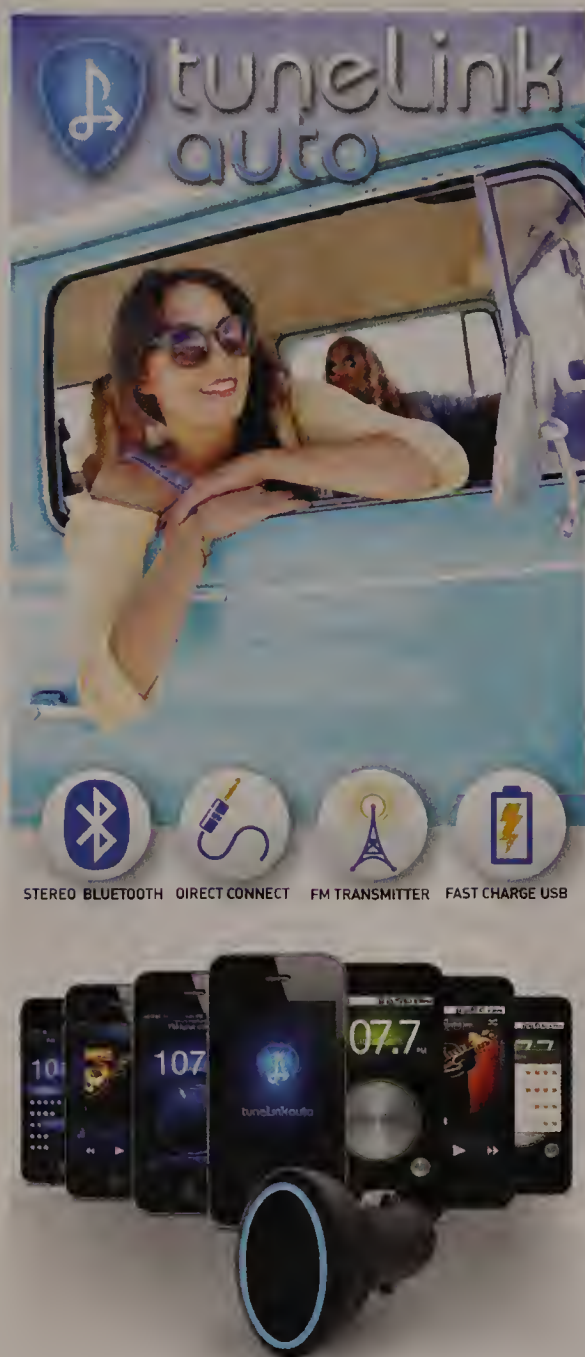
And then there's this year's Worldwide Developers Conference, in which all sorts of rules changed. Apple dropped the cloak of secrecy, with developers free to speak about what they learned and with

members of the press invited to attend and to write about what they saw. With iOS 8, developers are getting access to corners of the operating system that they've been clamoring for. Apps can share files, display widgets in Notification Center, and even run small portions of themselves inside other apps. On the Mac side, OS X Yosemite will benefit from iCloud Drive, which gives users free access to the iCloud file structure. Consider, too, the connectivity features, including Handoff, which allows Macs and iOS devices to pass information back and forth much more easily. That seems like a major course change. (For more, see "What You Need to Know: OS X Yosemite and iOS 8" on page 46.)

COOK IN CHARGE

Those developments are just the latest indicators that this is not Steve's Apple, but rather the post-Steve Apple. I might even argue that Apple executives have been able to unmake some decisions that Jobs—perhaps unwisely—insisted on. For starters, the "thermonuclear" patent war that Jobs started with Google may be abating, since the results of the trials have consisted of embarrassing disclosures, huge legal fees, and mild slaps on the wrist for the infringers.

I believe that if Apple stuck by the old "What Would Steve Do?" playbook, the company truly would be doomed, looking backward and second-guessing key decisions based on strategies that are increasingly out-of-date. Instead, Apple executives are making interesting and risky decisions. Whether the Beats acquisition ultimately succeeds or fails, and whatever the impact of the changes unveiled at WWDC, the fact that these things happened at all is a good sign for Apple's future. ■



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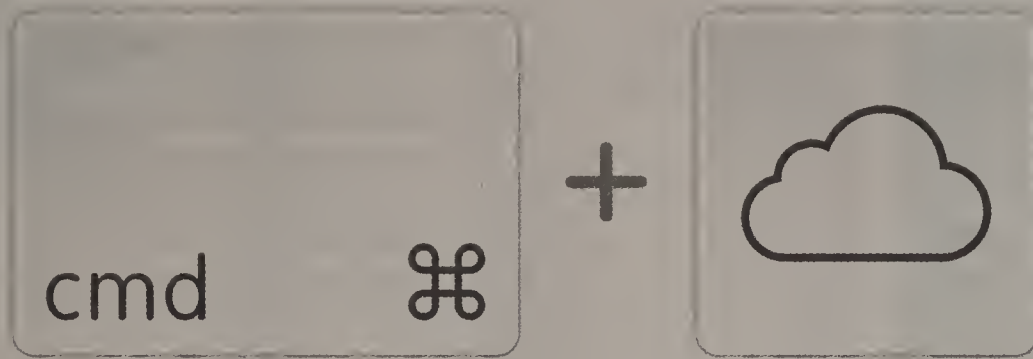
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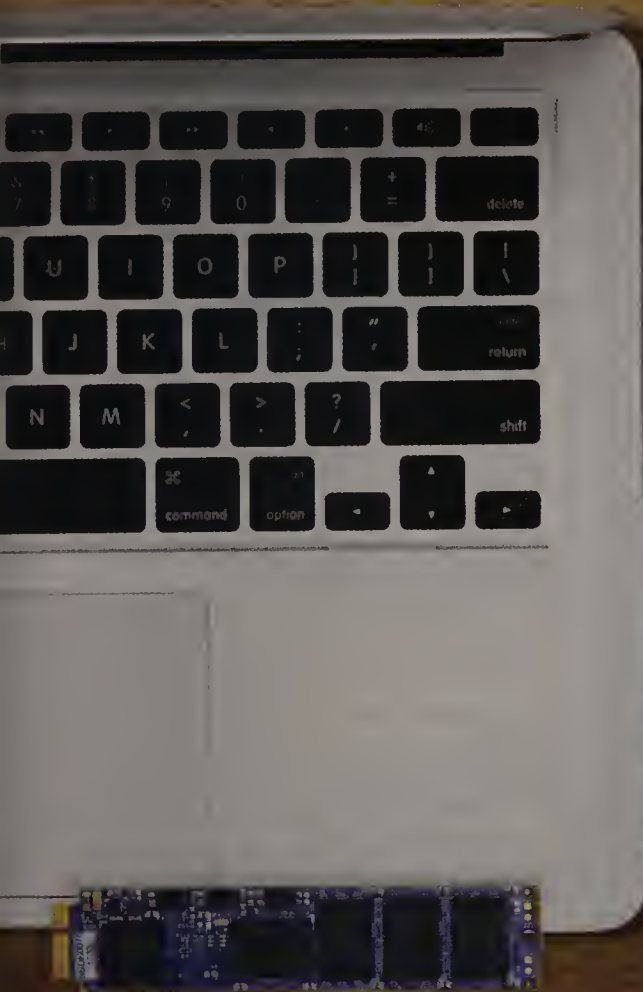
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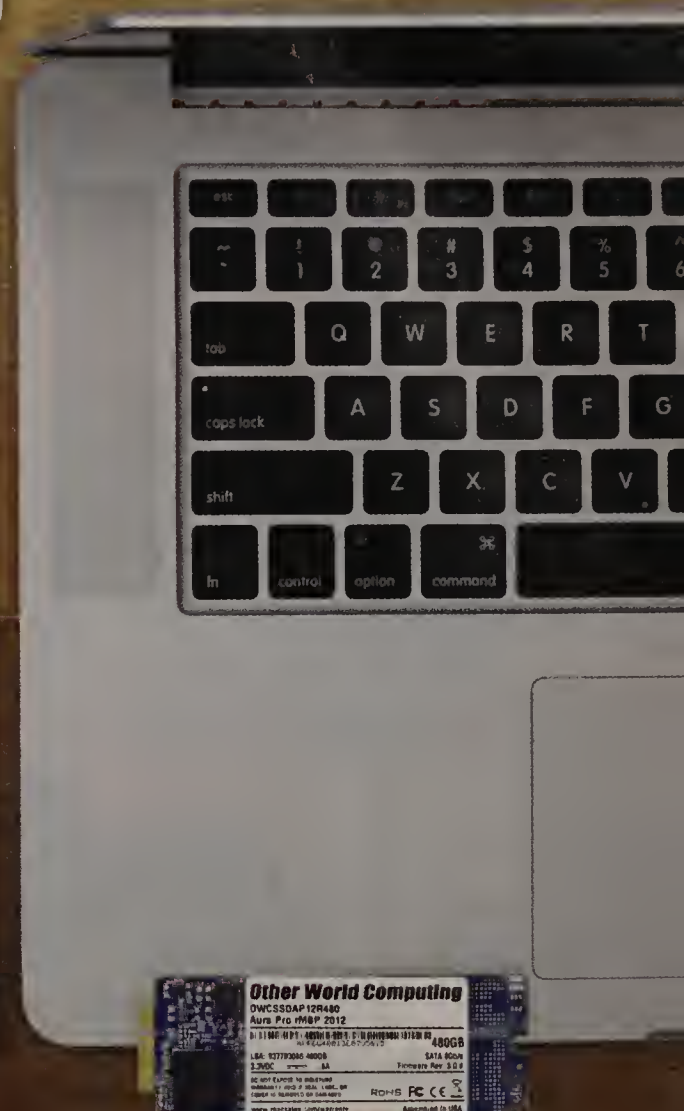
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Nine Technologies That Apple Disrupted at WWDC

A fleet of new products in iOS and OS X promise stiff competition for some developers.

BY MARCO TABINI

This year's WWDC keynote was jam-packed with new technologies destined for the next versions of iOS and OS X.

While this is great news for users, a number of developers who will soon be competing directly with Apple may not welcome the innovations.

CLOUD STORAGE

iCloud has matured into an essential element of the Apple ecosystem. With the introduction of iCloud Drive (go.macworld.com/icloudrive), services such as Dropbox will face pressure from Cupertino's aggressive pricing and iCloud Drive's seamless integration with iOS, OS X, and even Windows.

SCREEN-RECORDING APPS

OS X Yosemite will allow users to make screen recordings from compatible iOS devices. This capability targets developers who wish to create software previews for the App Store—but it will compete with apps that provide such functionality for a fee, such as Squirrels' Reflector (airsquirrels.com).

DEVELOPER TOOLS

When it comes to creating productivity tools for programmers, Apple often borrows ideas from its own developer ecosystem. This year is no exception. The latest version of Xcode is designed to make writing apps easier than ever, with the ability to "explode" an app's visual

make-up in 3D—pretty much what Itty Bitty Apps' Reveal (revealapp.com) does.

LAUNCH ASSISTANTS

OS X Yosemite includes the most significant reimaging of Spotlight in years—the search tool has a new look and added functionality. Many of these new features draw inspiration from popular launch assistants such as Running with Crayons' Alfred (alfredapp.com).

BETA APP DISTRIBUTION

Beta app distribution gets a major overhaul in iOS 8, thanks largely to Apple's acquisition of Burstly (go.macworld.com/burstly), developer of the TestFlight beta-testing service (testflightapp.com).

That puts pressure on other companies in this space, such as HockeyApp (hockeyapp.net), although they still have the upper hand in cross-platform support.

PHOTOGRAPHY APPS

iOS 8 comes with a host of goodies: separate focus and light-metering areas, the Photos app's all-new editing and management capabilities, support for time-lapse photography and third-party filters, and so on. Apple is making a bid to cement the iPhone's status as the casual shooter's platform of choice—which poses a challenge to third-party photo apps such as TapTapTap's Camera Plus (campl.us).

MAIL APPS

Apps such as Evernote's Skitch (evernote.com/skitch) will have to step up their game to vie with Mail's new Markup feature, which allows users to draw, sign, and highlight documents and attachments.

MESSAGING APPS

Messages gains support for location sharing, video and audio messages, and SMS text messaging. Apple is clearly going after the many competitors in this space, including Microsoft's Skype (skype.com) and Facebook's WhatsApp Messenger (whatsapp.com).

THE INTERNET OF THINGS

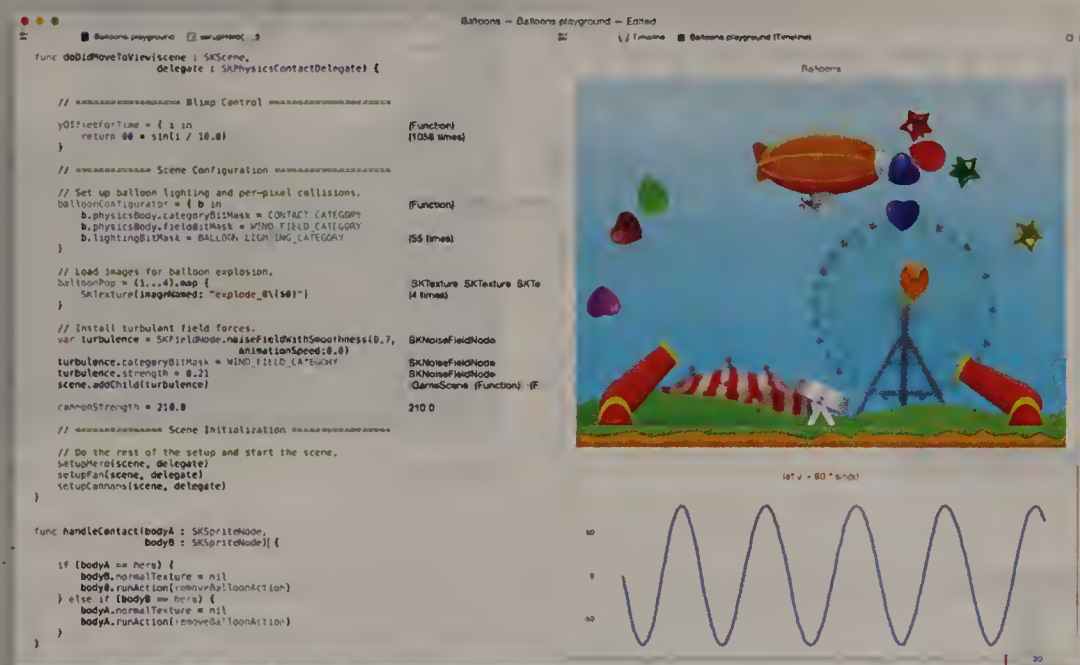
Apple aims to position itself at the center of the so-called Internet of Things with the introduction of two new technologies: HealthKit (go.macworld.com/healthkit) and HomeKit (go.macworld.com/homekit). The company's focus on privacy in this arena pits it against Google, which caused an uproar when it revealed its plans to sell ads on all sorts of devices (go.macworld.com/googledeviceads). ■

OUT OF THE NEST Google plans to sell ads on devices such as smart thermostats—but Apple has its own take on the Internet of Things.



Apple Unveils the Swift Language for iOS and OS X

BY JOAB JACKSON



With plans afoot to gradually retire the long-used Objective-C programming language, Apple has introduced a new language, called Swift, for designing apps to run on Apple iOS devices and Macintosh computers.

The company designed Swift (go.macworld.com/swift) to be as intuitive and easy to use as popular interpreted languages such as Python and JavaScript, while maintaining the speed and flexibility of compiled languages such as C++.

"Swift is fast. It is modern. It is designed for safety, and it enables a level of interactivity and development you've never seen before on the platform," said Apple CEO Tim Cook, who introduced the language to a surprised audience at the Worldwide Developers Conference.

Cook explained that Apple designed Swift to eliminate entire categories of common programming errors. It includes modern constructs such as generics, closures, type inference, multiple return types, operator overloads, and other

timesaving capabilities that developers have wanted to see in their languages.

Many Apple developers expressed excitement at the news. That enthusiasm is understandable, given the shortcomings of the aging Objective-C, created in the 1980s. Although Apple has done a commendable job of maintaining the language and its developer ecosystem, Objective-C still suffers from an unnecessary degree of complexity, notes Al Hilwa, the program director for software development research at IDC. Apple based Objective-C on C, a difficult-to-master programming language, and Objective-C's approach to passing messages within or between applications is equally hard to grasp.

Swift may be easier to learn and work with, but Hilwa speculates that it will still take developers time to switch away from Objective-C. Apple is working to make that transition easier. Swift code can utilize the same runtime system as Objective-C and relies on the same memory-management module. It also can use Objective-C's Cocoa libraries. "Your Swift code can fit alongside your Objective-C code and C code in the same application," Cook said. ■

WWDC 2014: The Developers Take the Stage

This year's WWDC focused on showcasing something a bit different: the cult of the developer.

BY DAVE WISKUS

The Worldwide Developers Conference 2014 keynote (go.macworld.com/wwdc2014) seemed like a developer's dream: extensions, TestFlight, third-party keyboards, a framework for building cloud-based apps, a compelling successor to Objective-C, and more. But what does this avalanche of empowerment mean for developers, and what impact will it have on the future of Mac and iOS apps?

CEO Tim Cook and Craig Federighi, senior vice president of software engineering, jumped right into the good stuff, showing off the new features in OS X Yosemite and iOS 8 (see "What You Need to Know: OS X Yosemite and iOS 8," page 46). In Yosemite, you can use your Mac as a phone, making calls and

answering SMS messages, as long as your iPhone is nearby. Also, limits on email attachment sizes are a thing of the past. And the new Handoff feature allows apps to seamlessly transition work in progress from an iOS device to a Mac or vice versa. Any one of these things would be a welcome development; together, they make for some of the most impressive transformations in Apple's history.

DEVELOPERS IN THE SPOTLIGHT

But the really interesting thing happened *after* the OS-upgrade show. The keynote jumped into a series of API (application programming interface) and framework announcements. It was the largest number of APIs Apple has ever mentioned at a keynote, each one more

impressive than the last. CloudKit, HealthKit, TestFlight, Swift, extensions, widgets—it was enough to make a developer weep.

At WWDC 2014, Apple showed us the future of Mac OS X, of iOS, and of apps—and as it did so, it acknowledged a plain truth: Apple's real consumer product is its community of developers. They

are the icons of today's popular culture.

Most of us think of developer tools the way we think of a mechanic's tools: functionally impressive but esoteric. We may never know how many app developers were watching the keynote video, but it's a safe bet that Apple knows. Apple also knows that the tools developers use have a direct impact on the quality of the apps they build, and this year, it put those tools front and center.

The reality is that the app industry has matured in an unexpected way, and the people who use apps are passionate about them. Apps are a huge hit. And tools such as TestFlight can bring more nondevelopers in on the software-making process; these new entrants offer a behind-the-scenes look that reveals many of these apps to be less the product of an abstruse development process and more of a creative endeavor.

A NEW OPPORTUNITY

Apple is only too eager to embrace this trend. This year, Apple has provided developers with a series of things we get to do, rather than things we *need* to do. Unlike the visual refresh Apple gave iOS 7 last year, which required us as developers to rethink an existing set of problems, the new tools in Yosemite and iOS 8 open a gateway to truly forward-thinking digital sophistication. ■



EVOLVING OS This year's WWDC keynote led off with what's new in the operating systems (both mobile and Mac).



NEW DEVELOPMENTS The keynote centered on Apple's new tools for developers.

Will iOS 8 and OS X Yosemite Keep Us Safer?

Apple defends user privacy with iOS extensions and security enhancements in the Swift language.

BY RICH MOGULL

With a mere two hours to cover the wealth of advances in its operating systems and developer tools, Apple offered few details in the WWDC keynote about security updates. Still, if you're somewhat familiar with Apple's platforms, the future of Mac and iOS security looks a little clearer: For the next generation of products, extensions are the name of the (security) game.

iOS 8: PRYING OPEN TOUCH ID AND THE SANDBOX

The inclusion of the Touch ID fingerprint reader in the iPhone 5s made it easy and convenient to use strong passwords. According to Apple, less than half of iPhone users enabled a passcode before the advent of Touch ID. On the iPhone 5s, 83 percent now use this crucial safety feature.

Touch ID makes using a password almost effortless. With Touch ID, when you first turn on your iPhone, or after you reboot it, you enter your password, which the phone stores in the Secure Enclave portion of the A7 processor. Your fingerprint unlocks and releases this password to the rest of the operating system.

In iOS 8, Apple is extending this model to include third-party application credentials. Apps that store their credentials in the iOS keychain will be able to use Touch ID to authenticate the user. That doesn't mean banks and retailers can use your fingerprint instead of a password for authentication. Rather, Touch ID allows an app to keep your password locked in the keychain until you release it with a registered fingerprint.

The details of other security enhancements are a bit murkier. Apple has long restricted communications between apps to maintain the security and integrity of app sandboxes. While this practice at times frustrates developers,

sandboxes limit the damage a compromised or malicious app can do.

In iOS 8, developers will be able to open their apps to external communications via *extensions*. An extension is like a little receptor on the edge of the sandbox that receives a message and acts on it. Extensions register themselves with iOS, which mediates communications between apps.

Only open combat on the Internet will demonstrate how well Swift's security works, but it is likely to outperform Objective-C's model.

Rather than opening up the flow of information willy-nilly, extensions obey the rules of the sandbox. Any requests to do something new on your device, such as communicate over the network or access a camera or microphone, will still require user approval. The fuzzy part is where Apple will draw the line in terms of asking for that approval.

What is clear is that iOS will act as the broker between extensions, which should maintain security since apps won't be communicating directly—or potentially attacking each other. If you try a new keyboard app, for instance, it won't send all your keystrokes to an attacker (as has happened on Android).

SWIFT CLIMB IN YOSEMITE

One advance in OS X 10.10 has significant long-term implications: the introduction of the Swift programming language. According to Apple, Swift wipes out buffer overflows and a series of other security issues that plague most languages. Only open combat on the Internet will demonstrate how well Swift's security works, but it's likely to

outperform Objective-C's model.

The changes in iOS 8 and Yosemite appear to be less about adding new security and privacy features than about opening those features to developers and extending them deeper into the app ecosystem. The more fully Apple enables security for developers, the better our devices will be able to combat the dark side of the Internet. ■



WWDC 2014: Apple Design Awards Winners

Apple recognizes apps that set new standards in design and innovation.

BY ROMAN LOYOLA

Apple describes the recipients of its annual Apple Design Awards (go.macworld.com/appledesignawards) as apps that “raise the bar in design, technology, and innovation.” Developers of the winning apps haul in a load of Apple hardware, as well as a trophy cube. Here are this year’s winners.

ADDIMAL ADVENTURE

Teachley’s *Addimal Adventure* (free; go.macworld.com/addimal) is a game for kids who are learning single-digit addition. Players must save the city of El Sumado by solving problems that exercise different math strategies.

BLEK

The point of Denis Mikan’s *Blek* (\$1; go.macworld.com/blek) is to draw lines that then animate to knock out dots as they appear on the screen. The game sounds easy enough, but it gets more complicated as you try to figure out the right gestures and avoid obstacles.

CINEMAGRAPH PRO

This professional graphics tool allows you to create “fixels”—combinations of videos and photos. With Fixel Photos’ Cinemagraph Pro (\$100; go.macworld.com/cinemagraphpro), you can quickly make animated GIFs from video clips, apply filters to videos, fix blemishes, and mask a specific area for animation.

DAY ONE

Bloom Built’s *Day One* for Mac (\$7; go.macworld.com/dayone) makes it easy and fun to keep a journal. You can integrate text, video, and photos into entries; and a calendar and support for tags and hashtags help you organize it all. The developer does make an iOS rendition, but Apple gave the award to the Mac version.



The winners of the Apple Design Awards are products that ‘raise the bar in design, technology, and innovation.’

DEVICE 6

Simogo’s innovative *Device 6* (\$4; go.macworld.com/device6) breaks new ground. This combination novel and game integrates sound, visuals, and motion, requiring you to rotate your iOS device in different directions.

LEO’S FORTUNE

In *Leo’s Fortune*, a platform game for iOS (\$5; go.macworld.com/leosfort), you’re looking for the thief who stole your gold. Lush environments, active backgrounds, and challenging obstacles fill the 25 levels of this game from 1337 & Senri.

MONUMENT VALLEY

Monument Valley (\$2; go.macworld.com/monvalley) sets out to do something big and succeeds. This game from Ustwo incorporates Escher-style

images and constructions into original gameplay as you guide a princess through each map and figure out the optical illusions.

PANOPERFECT

HalfPeeled’s free *PanoPerfect* (go.macworld.com/panopperfect) addresses the lack of support for panoramic photos in social apps. It helps you find a variety of panoramic shots, as well as share those you’ve taken on your iPhone.

THREES

A favorite among *Macworld* editors (go.macworld.com/threespick), Sirvo’s *Threes* (\$1; go.macworld.com/threes) is a challenging and nicely designed tile-matching game. *Threes* has a lot of personality, expressed through whimsical visuals and comical sounds.

SKY GUIDE

Search for thousands of celestial objects with Fifth Star Labs’ *Sky Guide* (\$2; go.macworld.com/skyguide). Equipped with the latest app technologies, it performs equally well on the iPhone and iPad.

STOREHOUSE—VISUAL STORYTELLING

Designed for the iPad, *Storehouse—Visual Storytelling* (free; go.macworld.com/storehouse) allows you to combine photos, videos, and text to tell a story using built-in templates, and then publish it to the Storehouse community or distribute it to friends and family via email, Facebook, or Twitter.

YAHOO NEWS DIGEST

Yahoo News Digest (go.macworld.com/ynd) for iOS provides curated content on top news topics. Updated twice daily, the free app strikes a fine balance between quick summaries and in-depth articles. ■

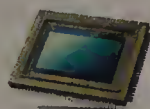
ULTRA HD 12G SDI

Blackmagic Design



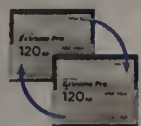
Introducing Blackmagic URSA, the world's first user upgradeable 4K digital film camera!

Blackmagic URSA is the world's first high end digital film camera designed to revolutionize workflow on set. Built to handle the ergonomics of large film crews as well as single person use, URSA has everything built in, including a massive 10 inch fold out on set monitor, large user upgradeable Super 35 global shutter 4K image sensor, 12G-SDI and internal dual RAW and ProRes recorders.



Super 35 Size Sensor

URSA is a true professional digital film camera with a 4K sensor, global shutter and an incredible 12 stops of dynamic range. The wide dynamic range blows away regular video cameras or even high end broadcast cameras, so you get dramatically better images that look like true digital film. The extra large Super 35 size allows for creative shallow depth of field shooting plus RAW and ProRes means you get incredible quality!



Dual Recorders

Blackmagic URSA features dual recorders so you never need to stop recording to change media. That's critical if you are shooting an historical event, important interview or where you just cannot stop shooting! Simply load an empty CFast card into the second recorder and when the current card is full, the recording will continue onto the second card, allowing you to change out the full card and keep shooting!



User Upgradeable Sensor

Blackmagic URSA features a modular camera turret that can be removed by unscrewing 4 simple bolts! The camera turret includes the sensor, lens mount and lens control connections and can be upgraded in the future when new types of sensors are developed. This means your next camera will be a fraction of the cost of buying a whole new camera! Choose professional PL mount, popular EF mount and more!



Built in On Set Monitoring!

Say goodbye to bulky on set monitors because you get a massive fold out 10 inch screen built into Blackmagic URSA, making it the world's biggest viewfinder! The screen is super bright and features an ultra wide viewing angle. URSA also includes two extra 5" touch screens on both sides of the camera showing settings such as format, frame rate, shutter angle plus scopes for checking levels, audio and focus!



Blackmagic URSA EF
\$5,995



Blackmagic URSA PL
\$6,495

www.blackmagicdesign.com

Blackmagicdesign



Apple's Secretive Acquisition Moves

Is Apple stepping up the pace of acquisitions?

BY JOEL MATHIS



SECRET SAUCE When it comes to the acquisitions process, Apple holds its cards pretty close to its chest.

Apple's acquisition in late May of Beats Music and Beats Electronics for \$3 billion (go.macworld.com/beatsrep) was significant even beyond its industry-shaking ramifications. The deal also offered a rare peek into Cupertino's usually clandestine acquisitions process.

Critics have long charged that Apple moves too slowly when it comes to buying outside companies and new technologies, but that seems to be changing (go.macworld.com/cook). CEO Tim Cook noted in April 2014 that Apple had made 24 strategic acquisitions over the previous 18 months.

Whether the number of acquisitions is actually increasing is hard to pin down: As in all of its processes, Apple puts a premium on secrecy.

"[Apple is] not very visible about those things," says Charles Golvin, an independent analyst, "so it's difficult to ascertain whether [the company has] picked up the pace or if it's [just] become more visible."

One of the best sources of information is Wikipedia, which offers a historical list of Apple's mergers and acquisitions (go.macworld.com/applewiki). The list contains 59 entries, including 13 just in 2013. In pure dollar terms, though, the purchase of Beats alone would likely surpass the value of all the acquisitions Apple has made in any single year of its history.

CONTRIBUTING FACTORS

According to analysts, Apple looks for three things when making a deal.

Synergy of brand and culture:

"[Apple is] very good at music," says Wedbush Securities analyst Michael Pachter, pointing to the company's history with the iPod and the iTunes Music Store. "Beats is a similar brand—[it has] a perception of quality, marketed well."

"There has to be a cultural fit [with Apple]," says consumer technology analyst Ben Bajarin of Creative Strategies. "Apple is not just looking at the tech."

Innovation: "[Apple has] picked up the pace [of acquisitions], but that is due to the nature of how fast innovation is happening around the industry," Bajarin says. "Many companies are getting funded, creating unique innovations,

and more, so Apple is looking to stay ahead of the market."

Bajarin offers several examples: The 2008 purchase of P.A. Semi (go.macworld.com/pasemi), a semiconductor design group, fostered the creation of Apple's A5 processor, which Bajarin describes as "one of the most innovative SoC [system on a chip] designs in the market today." Similarly, the 2012 purchase of AuthenTec (go.macworld.com/authentec) laid the foundation for the iPhone 5s's Touch ID.

A way to strengthen weak areas:

With its 2013 purchases of digital mapping companies (go.macworld.com/digmap), Apple was clearly attempting to shore up a weak spot after it ditched Google Maps in favor of its own unloved Maps for iOS.

Analysts see the acquisition of Beats as a way to make progress in the streaming music arena: The underdeveloped iTunes Radio is struggling to make headway against services like Pandora and Spotify, and Beats Music offers ready-made technology, an enthusiastic audience, and credibility in an area where Apple is seeking to gain a better foothold (see *Playlist* on page 82).

One final element in the speeded-up pace and size of acquisitions is Apple's gigantic hoard of cash—around \$150 billion as of the most recent quarter—which the company's investors fully expect it to put to good use. ■



Remembering eWorld, Apple's Forgotten Online Service

Apple's eWorld fostered a sense of community that far outlived the technology itself.

BY BENJ EDWARDS

Before the Internet's meteoric rise, large centralized dial-up services such as America Online, Prodigy, and CompuServe dominated the online landscape. In this competitive climate 20 years ago (go.macworld.com/isp), Apple introduced eWorld, a subscription-based information service for Mac and Newton users (go.macworld.com/eworld). Although Apple shuttered eWorld in 1996, the service is still notable for its unique city-based interface and as a symbol of Apple's overreaching ambition in that era.

Users accessed eWorld through Apple's custom client software and connected by way of a dial-up modem. Once you connected, the eWorld software displayed a playfully illustrated aerial view of a small city. Each building in it represented a different focus, containing articles, chat rooms, discussion boards, and downloads. For example, clicking the Business and Finance Plaza building presented the user with articles from *Inc.* magazine, business-themed discussion boards, and stock quotes. Other buildings focused on games and entertainment, shopping, learning, and Apple product support.

At launch, the service cost \$8.95 a month, including two free hours of access. Additional access cost \$7.95 an hour from 6 a.m. to 6 p.m., \$4.95 at other times. While those prices seem high today, they were in line with those of competitors.

TROUBLE IN EWORLD

From its start in June 1994, eWorld suffered from a lack of marketing and promotion. And because it took so long for Apple to make changes to its manufacturing processes, nearly a whole year elapsed before the company bundled the eWorld software with all new Macs (

URBAN LIFE eWorld's main screen offered a playful view of a virtual city.

While its numbers were never stunning, eWorld fostered a healthy and devoted online community.

macworld.com/eworlddelay). On top of those problems, the consumer-targeted Internet hit in a big way in 1994.

On the service's first birthday, Apple announced that eWorld had attracted 90,000 members. At the time, AOL measured its subscribers in the millions. Apple planned a Windows client, but that project never materialized.

In 1995, Apple introduced an Internet On-Ramp that gave eWorld users access to Internet newsgroups, FTP sites, mailing lists, and the Web. Throughout 1995, eWorld membership numbers rose slowly. Behind the scenes, Apple began planning the transition to an ISP model. And then the bottom fell out, putting Apple's projects into limbo.

THE END OF THE LINE

During the last few months of 1995, it became apparent that Apple would

post staggering losses (around \$700 million) at the end of the quarter. Services tangential to its primary profit center—hardware—had to go. Sadly, that included eWorld.

When Apple announced in March 1996 that eWorld would close, many subscribers reacted with huge disappointment. While its numbers were never stunning, the service fostered a healthy and devoted online following. At the end of its 22-month life span, eWorld boasted only 147,500 subscribers—a paltry number compared to AOL's 3.5 million.

But for those users who forged real, lasting relationships on eWorld, the service was never about numbers. It was about family and community. ■

You Can't Sue Your Way to Innovation

Apple may not have much choice about taking on its competitors in the courts—but are endless lawsuits distracting it from its primary mission of innovation?

BY MARCO TABINI

In the litigious world of mobile technology, it's hard to keep track of who is suing whom, but more and more often Apple's name is appearing in the headlines. Given the sheer number of lawsuits in play between the folks from Cupertino and other major industry players, I am starting to find much of this legal ballyhoo a little boring—so much so that I'm sometimes even tempted to root for the other guys.

START YOUR PHOTOCOPIERS

The products that have come out of Cupertino's labs in the last ten years have informed the design of just about every other device in their respective categories. After Apple introduced the iPhone, practically every other smartphone started to look like it. The iPad essentially invented a whole new product category. Even the MacBook has changed how we perceive laptops to such a degree that competitors can't resist finding "inspiration" in its looks.

Apple enthusiasts find it hard to watch competitors copy the company's products and innovations. Apple built its iPhones, iPads, and Macs with the idea that computers should make our lives better, and these devices have succeeded so well that many of us have formed an emotional attachment to them—and will pay a premium for them.

A NECESSARY EVIL

It's also true that Apple has to aggressively pursue every legal avenue to protect its products. If Tim Cook sud-



IDENTICAL COUSINS The similarity of the original iPhone (left) and Samsung's Galaxy S (right) has led to litigation.

denly decided to drop all of the company's Android-related lawsuits, the board would probably drum him out of the office. And Apple has a big enough army of lawyers and experts to take on any opponent without shorting Jonathan Ive and his creative team.

In other words, lawsuits or not, Apple is here to stay, because it has massive cash reserves and because it still makes products that stand head and shoulders above the competition's.

But Apple's name is coming up in the press too often for the wrong reasons. Whatever else lawsuits may accomplish, they don't help Cupertino innovate.

INNOVATE, DON'T LITIGATE

Of late, Apple's holy war against Android seems to be eclipsing its ability to wow customers. Though Apple might see the lawsuits as necessary to prevent competitors from catching up, such a strategy seems destined to fail, given how rapidly the quality of Android products is improving.

And the funny thing is, I *want* those other products to improve. Apple has always done best when acting as David to competing Goliaths; the role of lumbering corporate giant doesn't suit its upstart nature. Both Google and Samsung are doing an excellent job of keeping Apple on its toes, and that should ultimately result in better products at more competitive prices—benefiting us, the end users. Here's hoping that whatever Apple has in the pipeline will once more change the way we look at the world. ■

Apple has always done best when acting as David to competing Goliaths; the role of lumbering corporate giant doesn't suit its upstart nature.

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- ◆ Supports Time Machine backup, AirPlay and Plex media server
- ◆ Supports 802.11ac Wi-Fi* for your AirPort Extreme
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* USB Wi-Fi dongle not included

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Dual Core
CPU

1 GB
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CPU

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DDR3L
RAM

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DLNA

AirPlay

HDMI
1080P



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- ◆ Share all of your media with friends and family
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Run a Virtual Machine on your NAS



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- Snapshots for backup & restore

HDMI Local Display

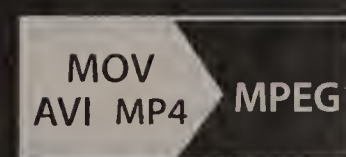
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Hardware-accelerated Transcoding

Seamlessly stream media to any device



- On-the-fly & offline transcoding
- Auto/Manual media conversion
- VOD streaming

Reviews

The Latest Mac Products
Reviewed & Rated

DISPLAY

Asus PB287Q Is a Budget-Friendly 4K Display

**Asus
PB287Q**



PRICE:
\$649

COMPANY:
Asus
asus.com

Asus's 28-inch PB287Q, one of only a handful of affordable UltraHD monitors, has an impressive feature list, including 3840-by-2160-pixel resolution, LED backlighting, two HDMI 1.4 ports, a DisplayPort 1.2 connection, and a bright 330 cd/m² luminance rating. Its adjustable stand includes support for Mobile High-Definition Link, as well as decent built-in 2W

speakers. On the downside, the PB287Q lacks a USB hub and has a clunky on-screen settings menu.

Because 4K monitors offer four times as many pixels as standard 1080p high-definition displays, they require serious graphics horsepower. The PB287Q can run at 60Hz connected to a compatible graphics card via DisplayPort 1.2, but operates at a cursor-dragging 30Hz over HDMI 1.4.

The PB287Q has a limited angle of view relative to Sharp's PN-K321 (which is much more expensive at

\$3500). The Asus display's colors shift as you move away from the center, and text appears slightly grainy. The higher pixel density makes icons and screen elements look small, and test photo colors were a bit muted.

If you need an UltraHD display to view large images or work on 4K video, the Asus PB287Q is a serviceable



option at a good price. It works best with DisplayPort 1.2, so make sure your hardware is compatible.—JAMES GALBRAITH

BATTERY UTILITY

Battery Diag Monitors Your MacBook's Battery

Battery Diag



PRICE:
\$2

COMPANY:
Rocky Sand Studio
rockysandstudio.com



As my 15-inch 2.3GHz Retina MacBook Pro heads toward its second birthday, I'm becoming

more curious about the health of its aging built-in battery. Battery Diag is a simple, handsome utility for checking basic battery stats.

Battery Diag displays some of the same data that OS X's System Information app does. But instead of forcing you to

BATTERY DIAG	
Remaining capacity	4,860 mAh
Full capacity	7,692 mAh
Design capacity	8,460 mAh
Battery temperature	30.6°C / 87.0°F
Power Usage	28 Watts
Power Source	Battery
Battery Condition	Normal

dig through screens, Battery Diag presents the most important stats with a single click on its menu-bar icon.

The utility displays the

battery's charge capacity—likely to be less than 100 percent on an older laptop—and the amount of charge remaining, both as percentages and in actual milliamp hours. The app also provides four easy-to-read status icons that indicate power source, battery health, cycle count, and time remaining on the

charge (when the laptop is unplugged) or time until the battery is fully charged (when the laptop is plugged in). Move your cursor over the

Health or Cycles buttons to see more specifics.

Click Battery Diag's Info (i) button to see battery capacity (the original maximum, current maximum, and current level) and temperature, the amount of power your system is using, and other information.

If you're mainly looking for a quick way to see basic battery data, Battery Diag does the job very well, and it's easy on the eyes.—ROMAN LOYOLA



Mac Gems are apps that offer standout utility or unique features at a great price.

Daylite 5 Tracks Your Business Contacts and Projects

Daylite 5



PRICE:
\$300

COMPANY:
Marketcircle
marketcircle.com

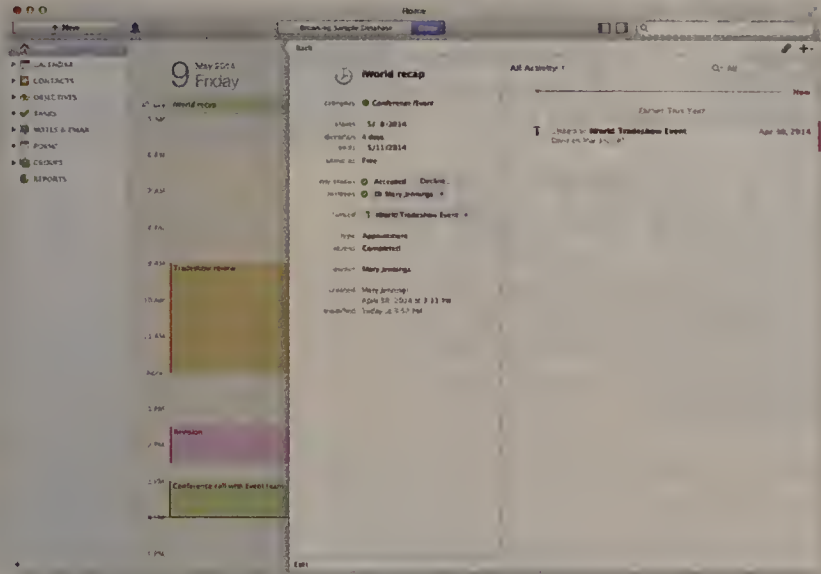
that's designed to help you keep tabs on your business, prep for new customers, and manage your clients' projects and birthdays. It integrates with Apple Mail and other apps, and works on your Mac and all of your mobile devices.

At first glance, Daylite may seem overwhelming. It requires a database server, so you'll have to dedicate a computer to that task. You can set this arrangement up yourself or use

a third-party service to do so. Setting up the Daylite server took a few minutes. I began by importing data from Apple's Contacts and Calendar apps. Importing contacts was a snap, but on the calendar import I ran into some glitches.

Daylite then starts tracking tasks and projects. Create a project and place associated items, such as contacts, managers, companies, email messages, notes, and letters, into it. As you link projects and clients, and add tasks and calendar items, the Home screen displays the schedule for a given day or week.

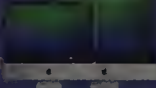















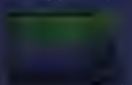





Daylite's new Insights reporting tool gives you a



broad view of how many open opportunities you've won, lost, or are waiting to complete. Daylite also offers reports showing, say, a list of clients with birthdays in a given week, or incomplete project tasks.

Apart from its import issues and weak documentation, Daylite is a great tool for organizing and managing every aspect of your business projects and relationships.—JEFFERY BATTERSBY

MACS: CURRENT LINEUP

PRODUCT	SPECS (STANDARD CONFIGURATION)	RATING	PRICE	DISPLAY	SPEEDMARK 9 ¹	MORE INFO
DESKTOP						
	Intel Core i5/1.4GHz (dual-core)		\$1099	21.5 inches	116	go.macworld.com/imac211414
	Intel Core i5/2.7GHz (quad-core)		\$1299	21.5 inches	179	go.macworld.com/imac212713
	Intel Core i5/2.9GHz (quad-core)		\$1499	21.5 inches	189	go.macworld.com/imac212913
	Intel Core i5/3.2GHz (quad-core)		\$1799	27 inches	211	go.macworld.com/imac273213
	Intel Core i5/3.4GHz (quad-core)		\$1999	27 inches	235	go.macworld.com/imac273413
	Intel Core i5/2.5GHz (dual-core)		\$599	Not included	n/a ²	go.macworld.com/mini2512
	Intel Core i7/2.3GHz (quad-core)		\$799	Not included	149	go.macworld.com/mini2312
	Intel Xeon/3.7GHz (quad-core)		\$2999	Not included	291	go.macworld.com/macpro3713
	Intel Xeon/3.5GHz (six-core)		\$3999	Not included	323	go.macworld.com/macpro3513
PORTABLE						
	Intel Core i5/1.4GHz, 128GB		\$899	11 inches	131	go.macworld.com/air1281114
	Intel Core i5/1.4GHz, 256GB		\$1099	11 inches	139	go.macworld.com/air2561114
	Intel Core i5/1.4GHz, 128GB	n/a ²	\$999	13 inches	n/a ²	go.macworld.com/air1281314
	Intel Core i5/1.4GHz, 256GB		\$1199	13 inches	138	go.macworld.com/air2561314
	Intel Core i5/2.5GHz (dual-core)		\$1199	13 inches	n/a ²	go.macworld.com/macbook132512
	Intel Core i5/2.4GHz (dual-core), 128GB		\$1299	13-inch Retina	155	go.macworld.com/macbook1312813
	Intel Core i5/2.4GHz (dual-core), 256GB	n/a ²	\$1499	13-inch Retina	168	go.macworld.com/macbook1325613
	Intel Core i5/2.6GHz (dual-core)		\$1799	13-inch Retina	177	go.macworld.com/macbook132613
	Intel Core i7/2.0GHz (quad-core)		\$1999	15-inch Retina	n/a ²	go.macworld.com/macbook152013
	Intel Core i7/2.3GHz (quad-core)		\$2599	15-inch Retina	282	go.macworld.com/macbook152313

¹Speedmark 9 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.8 (Mountain Lion). For more information, see go.macworld.com/speedmark9. ²Not yet tested

PRESENTATION SOFTWARE

Deckset for Mac Excels at Minimalist Presentations

Deckset 1.1.0



PRICE:
\$20

COMPANY:
Unsigned
Integer
decksetapp.
com

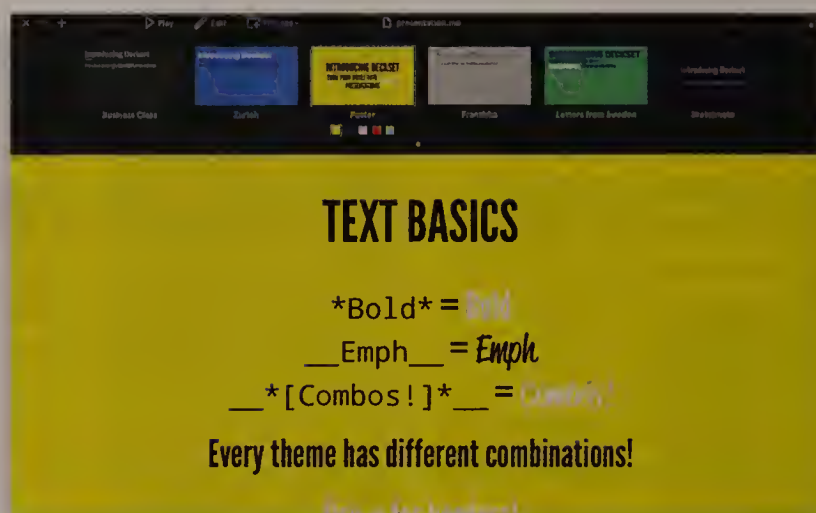


Unsigned Integer's \$20 Deckset aims to make it simple to create clean, attractive presentations, and the app goes about the

task in a different—and delightful—way.

Though Deckset offers eight beautiful themes for presentations, you'll do most of your visual work outside it in a plain-text editor, using basic Markdown syntax.

Deckset interacts seamlessly with your external editor, offering a live preview



of slides as you edit, and updating them whenever you save the text document.

Once you have your text, building a presentation with Deckset is easy, and you can augment slides with images and video. To add multimedia,

drag and drop a media file into the Deckset window; the app adds the appropriate Markdown code to the clipboard.

Deckset has only rudimentary image and video support, and the inline image alignment is a bit wonky: When you

insert a media link before or after a line, the app has trouble wrapping multiple lines.

But really, Deckset isn't intended for such fine adjustments. It's designed for the average person who needs to make pleasing slides without the muss and fuss of Keynote or PowerPoint—and in that regard, it's excellent. The themes are crisp, the image integration is stunning, and the focus on plain-text editing keeps your mind on facts rather than fonts.

One issue I hope future versions will address is the lack of slide transitions—it's an odd omission in an otherwise polished app.

—SERENITY CALDWELL

CAMERA

Fujifilm X-E2 Is a Compact Camera for Photo Buffs

Fujifilm X-E2



PRICE:
\$1399

COMPANY:
Fuji
fujifilmusa.com

The Fujifilm X-E2 resembles a classic Leica camera, with rangefinder-like dials that govern shutter

speed and exposure—but it gives a nod to modernity with wireless image transfer and a video mode capable of capturing full HD footage at a swift 60-fps rate.

Fujifilm has geared the camera toward semiprofessionals, in contrast to its consumer-level X-A1, and the X-E2 comes with a price tag to match: \$1399 for a kit with a standard 18mm–55mm lens (body only is \$1000).

The X-E2 features a DSLR-size APS-C sensor with a 16.3-megapixel effective resolution. The eye-level viewfinder offers a whopping 2.36-million-dot resolution; the LCD just beneath helps in composing shots. The camera can switch between the two in an instant, thanks to the eye sensor next to the viewfinder.

The 3-inch, 1.04-million-dot LCD cannot tilt or swivel; it's fixed to the camera's backplate. Other controls match what you'd expect to see on a digital SLR, including dedicated buttons for autoexposure lock and autofocus lock, drive modes, and a couple of customizable function buttons.

In all, the X-E2 has four buttons you can tweak to suit

your needs, plus a vacant hot shoe for accessory attachment, a pop-up flash, eight digital filter effects, and Fuji's Film Simulation modes. What's missing, besides an optical low-pass filter (which Fuji jettisoned in order to eke out more detail), is a dedicated shooting-mode wheel.

With its generous width and faux-leather front, the X-E2 feels better in the hand than the much cheaper X-A1, but you'll pay a premium for that design and for the camera's other bells and



whistles, such as the eye-level viewfinder.

The X-E2 is worth considering for its knockout images alone. In terms of sharpness, color, and richness of detail, its pictures were almost on a par with a DSLR's. Video looked equally great. —GAVIN STOKER



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Craig Sawyer, Retired Navy Seal, Pelican Pro



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STORAGE DEVICE

G-Drive Pro With Thunderbolt Offers Compact Design

G-Technology G-Drive Pro with Thunderbolt (4TB)



PRICE:
\$850

COMPANY:
G-Technology
g-technology.com

The G-Drive Pro with Thunderbolt is a compact box, especially for a four-drive RAID with 4TB of storage; this model is

only a half-inch taller than G-Technology's G-Drive.

That slight difference in weight and size may not seem like a crucial differentiator for desktop storage. The G-Drive Pro has an aluminum enclosure much like that of other G-Technology drives, too. Inside, though, things are

quite different. Unlike the G-Drive, which holds a single 3.5-inch drive, the G-Drive Pro with Thunderbolt has four 2.5-inch drives configured in a hardware RAID 0 setup.

While four-drive RAID configurations aren't uncommon, they typically involve drive mechanisms that you can replace without tools. In the case of the G-Drive Pro, in contrast, opening the enclosure voids your warranty, and you need both a Phillips-head and a T8 security Torx screwdriver to replace the drives.



The four independent 7200-rpm drives give the G-Drive Pro with Thunderbolt a nice speed boost. In our tests, it performed about three times as fast as an average 2.5-inch 7200-rpm drive. But it lagged behind competing RAID enclosures that use four 3.5-inch 7200-rpm drives.

We did see some unusual

—and undesirable—behavior. After sitting idle for 15 minutes, the drive took more than a minute to return to ready state.

If you're looking for desktop RAID hardware that's smaller and lighter than average, the G-Drive Pro with Thunderbolt may be just the ticket. But it's pricey, and it uses an external power supply.—ALBERT FILICE

The PowerCube: a tailored power solution by Allocacoc

The traditional power strip gets a makeover with the PowerCube: a stackable, changeable set of cubical power-outlet extensions that introduce a different standard for power strips.



reddot award 2014
winner



The award winning PowerCube is modular and stackable with outlets on five of its six sides (The sixth side is the plug). Because of its modular design you can always create the amount of sockets you desire. And as some models have a Powered Dual USB port instead of the fifth outlet, you can also charge your smartphone or tablet right from your desktop.

So the decision is yours: Do you use it into a wall socket or conveniently mount one of the corded versions on - or beneath - your desktop with the included mounting system? And as every PowerCube is equipped with an overload protection, you do not have to worry about overloading the set-up you created, as the fuse will automatically trip when you got a bit too enthusiast connecting all your devices.

Visit www.allocacoc.us for more information.

Mountain Lets You Unmount Drives With a Click

Mountain
1.0.2



PRICE:
\$6

COMPANY:
Appgineers
appgineers.de



Whenever I want to take my MacBook somewhere, I need to go to the Finder and disconnect my 1TB LaCie drive (and when I sometimes forget to do so, the MacBook scolds me for not ejecting my drives properly). It seems like a pretty minor hassle—but over time it turns into a headache.

Appgineer's \$6 Mountain offers a solution I particularly like. Mountain installs as a menu-bar utility with an eject icon. Click that icon to see a

list of internal and external volumes (including any connected servers); click the eject button next to a volume to immediately unmount it. The menu also lists volumes you've recently connected to; click the upside-down eject icon next to one of these volumes to remount it.

Mountain's menu includes an option to connect to a server, as well as an "Unmount All and Sleep" option. The latter command is the one-click solution I've been looking for: It unmounts all connected volumes (except the startup drive), and then puts the computer to sleep.

Mountain has a bunch of

customization options. You can hide internal, system, and unmounted volumes, as well as open newly mounted volumes in the file manager of your choice. You can also set alerts to notify you when

volumes become available or when they are unmounted, and when it's safe to unplug an external volume.

The thing I like best about Mountain is the tool's simplicity. When it comes time to unmount a disk, you just click a button or press a keyboard shortcut. If you regularly attach external volumes to your Mac laptop, Mountain could make your life a little easier.

Note that due to Apple's sandboxing requirements, the Mac App Store version lacks some of the features offered in the version on the developer's website, so I recommend purchasing it directly from the vendor.—DAN MILLER

Volumes

Macintosh HD

Recent Servers

Design

Editorial

Clear Recent Servers

Connect to Server...

Unmount All and Sleep

License...

Support

Preferences...

Quit Mountain

Eazy Draw®

Free Market
eazydraw.com

App Store
(remember spelled with a "z")

Icons
Illustrations
Text Layout
Logo Design
Web Graphics
Charts & Diagrams
Technical Drawings



New with version 6: brushes, custom tool palettes, improved brush and pencil tools for creative sketching with pen and tablet, hot keys, node edit and much more.

DISPLAY

NEC MultiSync EA274WMi Senses Your Presence

**NEC
EA274WMi**

PRICE:
\$799

COMPANY:
NEC
necdisplay.com

The NEC MultiSync EA274WMi is a 27-inch widescreen desktop monitor with high-quality IPS-panel

technology, LED backlights, and an antiglare screen. This 2560-by-1440-pixel monitor connects to your Mac or PC via DisplayPort, HDMI, DVD-D, or VGA, and offers a four-port USB hub for peripherals. You can also connect two sources to the display and use NEC's Picture By Picture feature to view both simultaneously.

The EA274WMi provides built-in speakers and a port for

plugging in headphones. The stand can pivot between portrait and landscape modes, swivel left or right, tilt forward and back, and adjust a generous 5 inches in height.



The energy- and privacy-saving Human Sensor on the bottom edge of the bezel recognizes when someone is in front of the display. Basically, this sensor is a motion

detector: When no one is present, the screen dims. When someone is in front of the screen, it returns to its previous brightness settings.

The EA274WMi's screen looks great. You can move from side to side or up and down without obvious color shifts, thanks to the IPS panel. In tests, grays were neutral and whites a little warm, but I find that preferable to a too-cool screen. Skin tones looked natural and text was easy to read, even at small sizes.

If you're looking for a large, high-quality IPS monitor with an environmentally friendly attitude, the NEC MultiSync EA274WMi is a great choice.
—JAMES GALBRAITH

ADVENTURE GAME

Tesla Effect Is a Case You Might Not Want to Crack

**Tesla Effect:
A Tex
Murphy
Adventure**

PRICE:
\$20

COMPANY:
Atlus
atlus.com

Atlus's *Tesla Effect: A Tex Murphy Adventure* marks the return of a cult classic from the 1990s—*Tex Murphy*, a

full-motion video (FMV) franchise. In these hilariously cheesy games, live actors play out scenes that are an unholy combination of bad B-movie and point-and-click adventure.

Tex Murphy is a hard-boiled, wisecracking private investigator who awakes in the middle of an abduction and discovers that he has amnesia. He has forgotten everything that has happened

in the seven years since his last case (explored in 1998's *Tex Murphy: Overseer*). All Murphy has to work with is a few clues, and he's off to solve the crime, encountering characters such as a sleazy rival PI and famed inventor Nikola Tesla along the way.

Set in San Francisco after a nuclear war, the game is pulp noir, but more *Naked Gun* than *Maltese Falcon*. *Tesla Effect* is saturated with jokes, some hilarious, many groan-worthy. It renders sequences in gorgeous HD, and numerous actors from the original series make a comeback.

Tesla Effect is basically two games in one: In the FMV sections, you're questioning friends and suspects, flirting,

telling dumb jokes, and trying to uncover the details of the past seven years. Bolted onto this is a 3D adventure game in which you wander around, pick up objects, and solve puzzles.

The first half of the game isn't bad. Things start to go wrong when you hit one too many assemble-the-object puzzles. If you have turned on

the more challenging Gamer mode, which hides hints and stops highlighting objects, these puzzles become a tedious nuisance.

When assorted enemies enter the scene, the fun really grinds to a halt. If they catch you, the game ends—and you'll get caught over and over again.—HAYDEN DINGMAN



WHAT'S IN YOUR DRAWERS?



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*Valid for items \$25 or greater value. Good until 9/30/14

Hot Stuff

What We're Raving About This Month

Illum

Lytro's \$1499 camera captures data on millions of rays of light, including their color, intensity, and direction. This information allows users to refocus photos after taking them. Illum has a 30mm–250mm equivalent focal lens up front, a 4-inch touch-screen on the back, and a slew of physical controls for items including the shutter, exposure, and autofocus (lytro.com). —JARED NEWMAN



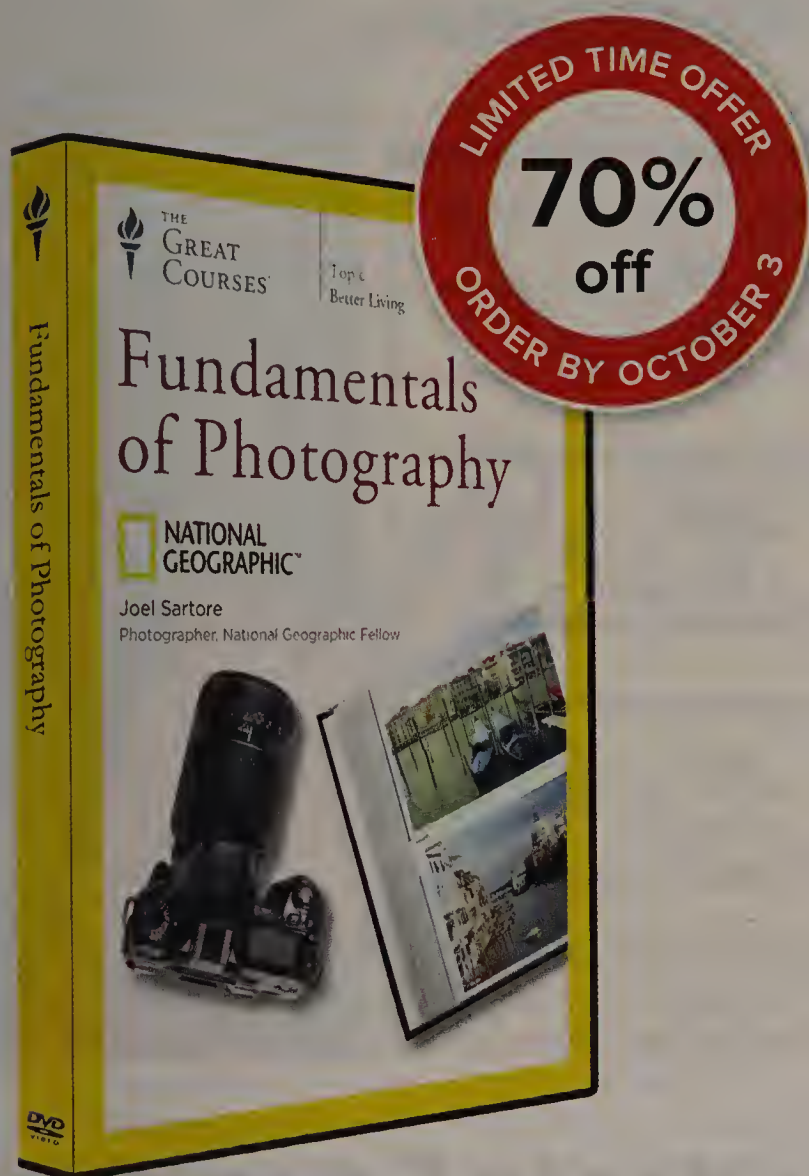
RT-AC3200

Asus's new router (price not announced) is all about optimizing your Wi-Fi connection. It packs triband MIMO, beamform support to supercharge connection strength, a SmartConnect feature that selects the best-performing spectrum band, and adaptive bandwidth management (asus.com). —BRAD CHACOS

EARTH 3D

3Planesoft's \$2 Earth 3D Amazing Atlas is a great educational tool designed to help anyone who's interested in geography learn more about our planet. The app provides a thorough overview of the world, with beautifully designed landmarks and lots of detailed information about everything from the tallest skyscrapers to the largest peninsulas (3planesoft.com). —MARCO TABINI





Fundamentals of Photography

Taught by Joel Sartore
Photographer, National Geographic Fellow

LECTURE TITLES

1. Making Great Pictures
2. Camera Equipment—What You Need
3. Lenses and Focal Length
4. Shutter Speeds
5. Aperture and Depth of Field
6. Light I—Found or Ambient Light
7. Light II—Color and Intensity
8. Light III—Introduced Light
9. Composition I—Seeing Well
10. Composition II—Background and Perspective
11. Composition III—Framing and Layering
12. Let's Go to Work—Landscapes
13. Let's Go to Work—Wildlife
14. Let's Go to Work—People and Relationships
15. Let's Go to Work—From Mundane to Extraordinary
16. Let's Go to Work—Special Occasions
17. Let's Go to Work—Family Vacations
18. Advanced Topics—Research and Preparation
19. Advanced Topics—Macro Photography
20. Advanced Topics—Low Light
21. Advanced Topics—Problem Solving
22. After the Snap—Workflow and Organization
23. Editing—Choosing the Right Image
24. Telling a Story with Pictures—The Photo Essay

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Why iOS 8 Will Matter to Educators

Here's what one iPads-for-education expert thinks about the newest iOS and its benefits for schools.

BY FRASER SPEIRS

Several years ago, I implemented the world's first whole-school, one-to-one iPad program (go.macworld.com/ipadproject), in which all students in the school use iPads full time. The iPad has served us well, but recently I started to worry that it would always be the Mac's little sibling. Before WWDC last year, I wrote a blog post about the limitations of iOS that we'd discovered when using it for serious productivity work.

Last year, I didn't get much that was on my iOS 7 wish list. (We did get AirDrop, and it has been transformational in how easily it lets us move large files around the classroom.) At WWDC 2014, Apple delivered on a huge chunk of my wish list with iOS 8, and I couldn't be happier.

EXTENSIBILITY

The critical iOS 8 feature for someone who wants to use the iPad as a primary computing device is *extensibility*.

Until now, iOS apps have had limited means of working together. For example, if I want to save a webpage in Evernote on my iPad, the fact that Safari and Evernote cannot communicate directly is a serious impediment.

Extensibility will end that. (See page 32 for more details.) Apps such as Evernote or Pocket, for instance, could provide an extension that hooks into Safari and clips the current webpage to their respective services, without the user's leaving Safari.

The benefits don't extend just to Web browsing. Twitter is a huge source of my

read-later material. In iOS 7, the ability to send links to Pocket has been something that the makers of apps such as Tweetbot and Twitterrific have had to build in. But what if I want to send my Twitter links to Evernote instead? Under iOS 7, I'd need to lobby the developers of the apps I use to incorporate Evernote support. In iOS 8, the Evernote developers could make such a thing happen themselves.

Extensibility promises to open up a whole new range of workflows—and to make them accessible to ordinary users.

iCLOUD DRIVE

As a teacher, I have gone from spending time in each lesson helping students find the files they saved somewhere on their

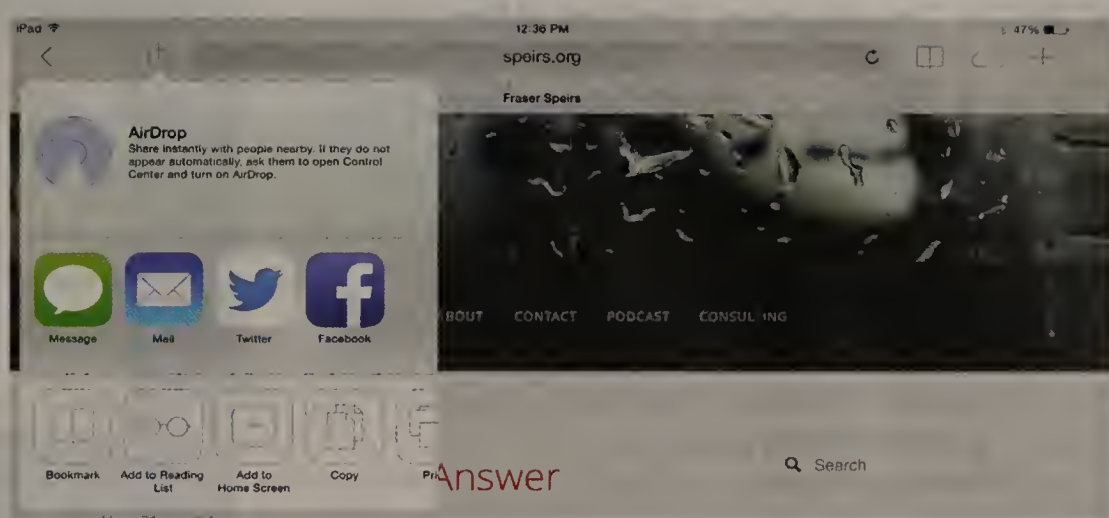
Macs, to having them readily understand that “your Pages files are inside Pages” on the iPad. iOS’s reworking of the file system has been a huge plus for those of us who work with novice users.

iCloud Drive puts the file system back into iOS. I’m conflicted about it. First, from a teaching point of view, I hope that Apple is not introducing the ability to “lose” your files on iOS by saving them in the wrong place. Apple does still seem to support the concept of having app-specific folders for files, but I’m reserving judgment.

Second, if every app adopts iCloud Drive, I wonder if that will lead to students’ eating up their iCloud storage allocation more quickly. Apple is lowering the prices for extra storage, but schools will need a way to provide students more storage that doesn’t involve handing out gift cards. It’s not just about the cost; it’s about how easy or difficult Apple makes it to extend iCloud storage limits for students.

MANAGEMENT FUNCTIONS

When I started deploying iOS in my school in 2010, the process of setting up devices and deploying apps was exactly the same as the process I followed to set up my personal iPad. That process was never going to scale beyond 100 or so devices. Today, iOS deployment has become far more professional and scalable. What



MORE OPTIONS Extensibility in iOS 8 could make the Save To menu a lot bigger (and a lot more useful).

iOS 8 brings to the table in this regard is fairly minor but still very welcome.

For starters, it offers new Mobile Device Management controls and queries that allow a management server to interrogate a device about its state. One I’ll use heavily is the ability to discover when a device last backed up to iCloud; with it, I’ll be able to tell when students are having trouble with their backups.

The Apple TV has become de rigueur for schools making heavy use of iOS, but managing the boxes on large school networks has always been challenging. Sending traffic between iOS devices and the Apple TV boxes across such networks has been problematic for schools where, for example, the student network and the staff network are isolated from each other. iOS 8 promises to solve the problem by eliminating the need for a network between the two devices: Whereas iOS 7 had peer-to-peer discovery, iOS 8 has peer-to-peer discovery and playback.

This development is important in several ways. First, schools with complex networks no longer need to find work-arounds to accommodate the Apple TV. Second, schools with no networks can still buy and use Apple TV boxes in the classroom. Third (and this point is dear to my heart as a traveling consultant), visitors to the school will not need to sneak onto the network just to use the Apple TV.

STAY ORGANIZED iCloud Drive adds file-management functions, but it might confuse novice users.

KEYBOARD REPLACEMENT

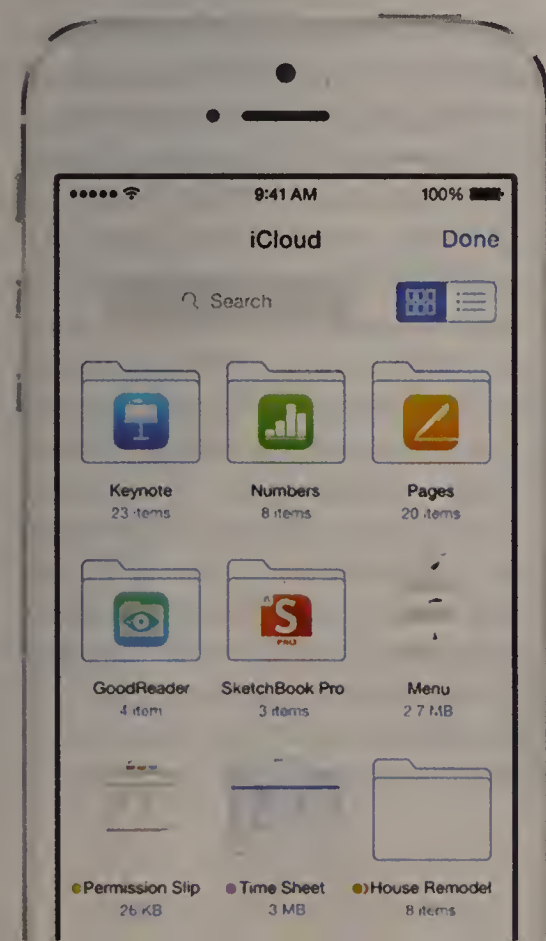
I have not seen much evidence that the iOS keyboard is a barrier to using iPads. Typing is all about practice, something our students get plenty of. That said, the iOS keyboard has always presented its key caps in uppercase. It’s a problem for younger users, who start off not knowing any letters at all, and are always introduced to lowercase letters first. Now that the iOS keyboard is replaceable, I hope some enterprising developer will build a lowercase keyboard for schools. Just don’t set the letters in Comic Sans, okay?

iPAD 2 SUPPORT

In the past few years, schools have been buying the iPad 2 like it was going out of style (which it was; Apple finally ditched it in March). The main reason: Device-to-student ratios trump all other considerations. The most important thing is to get to a point where students don’t have to share devices, and the iPad 2 made that possible for some schools. I don’t have hard data on this, but I imagine that the iPad 2’s installed base is disproportionately slanted toward education. The fact that iOS 8 will run on the iPad 2 comes as a relief to many school IT managers.

iOS 8’S PROMISE

Overall, I’m delighted that iOS is coming out of a slightly awkward stage in its development. iOS 8 promises to take the experience of the serious iOS user to a whole new level. I can’t wait to see what developers do with it. ■



iOS Comes Into Its Own With Extensions

With the advent of extensibility in iOS 8, Apple's mobile OS is finally maturing as a platform.

BY DAN MOREN

In some respects iOS will always be the new kid on the block, the upstart, the whippersnapper. But judging from this year's WWDC keynote announcements, the mobile OS is embarking upon a new stage in life—if not reaching full maturity, then at least growing from childhood to adolescence. This new stage doesn't just involve the usual incremental increase in front-facing features. Rather, it's something deeper—an exponential change in the mobile OS's power, and in the things we can do with it. And there's no better sign of this evolution than the introduction of extensions.

EXTEND THIS

As good as iOS is these days, it has always had pain points, in which a task that should be simple takes too many steps—or at least many more steps than it would, say, on a Mac.

All too often such slowdowns come when we need to move between apps. The addition of multitasking in recent iOS versions has made it easier to jump between apps, but its implementation, along with iOS's sandboxing restrictions, kept the process somewhat cumbersome. iOS has largely limited us to moving between the apps that Apple wants us to move between, in the manner that the company wishes.

Extensions aim to smooth such transitions, though for the moment their functionality is still limited. In certain ways, the list of available extension types for iOS 8 (developer.apple.com/ios8) is reminiscent of the first list of multitasking

options for iOS 4. At first blush the scope of these extensions might seem narrow: Sharing services, Notification Center widgets, storage-provider options, photo filters, a document picker, and even third-party keyboards are all fairly specific, with targeted uses. But then there's the extremely broad custom actions option, which could promote an entirely different way of thinking about what apps can do.

Custom actions, such as the Bing

Translate function that Apple showed off in its WWDC keynote, are a window into much greater functionality. They let apps project a portion of their functionality into other apps, allowing you to harness the power of an app without even launching it.

The custom actions capability is game-changing for iOS. It's the kind of feature that power users have longed for, largely because we've taken it for granted on the Mac—the Services menu has lived in the application menu since the original release of OS X.

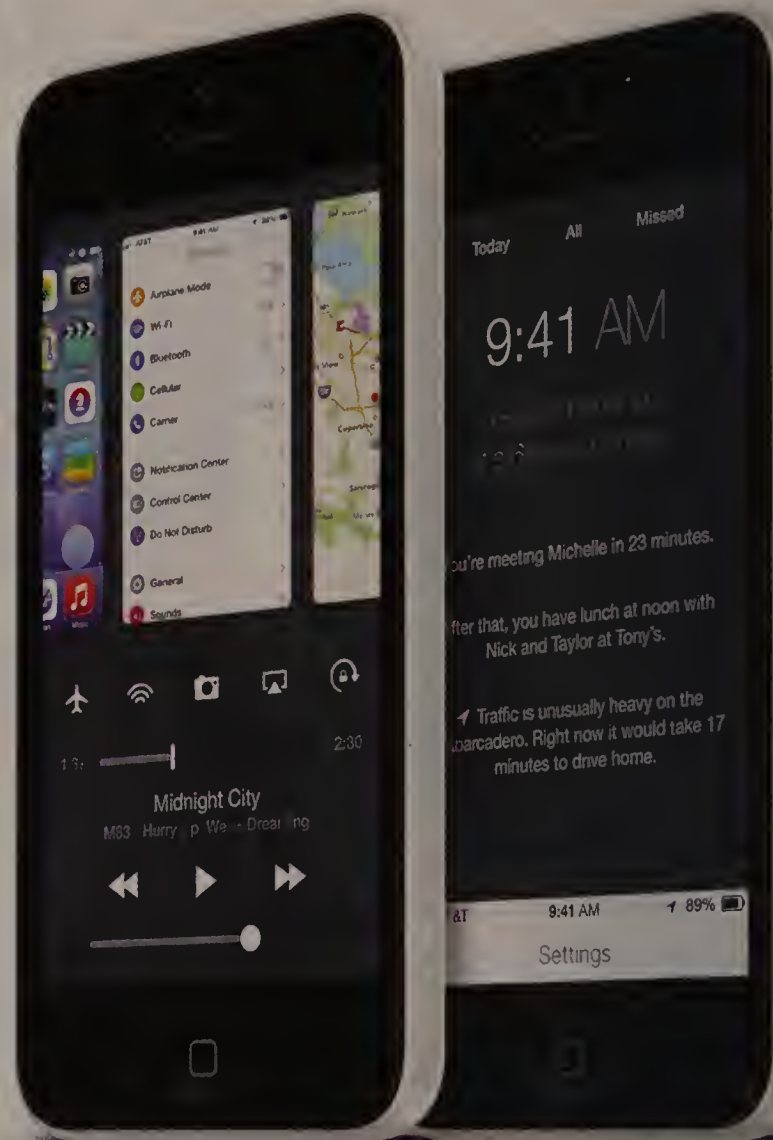
EQUAL PARTNERS

Although iOS has matured, we users have still had to adjust our expectations

of it, and to remain aware of its various restrictions—its dependency on battery life, for starters. People have long maintained a “good, but...” attitude toward it. While that sentiment may not entirely disappear with iOS 8, the feeling will recede into the background.

Over the past few iOS releases, we've started to see some parity between iOS and OS X in terms of front-facing features, capabilities (such as Facebook integration) that roll out to both platforms simultaneously. With iOS 8 and OS X Yosemite, Apple is introducing underlying technologies to both platforms at the same time: Peer-to-peer wireless networking, for one, now lets iOS devices and Macs talk to each other seamlessly. And the new Swift programming language applies across the Apple ecosystem.

For those of us who have long loved the ability to bend the Mac to our will, iOS has always had an also-ran quality. But Apple's latest changes starkly position the Mac and mobile platforms as equals and reinforce the notion that all of Apple's devices are here to stay. ■



POWERFUL, FLEXIBLE Extensibility enhances Notification Center and other functions.

iOS 8's new custom actions capability is the kind of feature that power users have longed for.

Continuity Is the Future of Apple

Sales numbers for the Next Big Thing won't matter as much as users and the stories they want to tell.

BY SERENITY CALDWELL

An Apple device can tell many stories: One person can pick up an iPhone and see a communication device; another, a pocket camera. But whether you use a device for creative endeavors, consumption, or both, doing so has always involved some measure of compromise.

We write email on iPhones because it's convenient not to pull out a laptop, even when the laptop is nearby. We drag Macs onto airplanes because we need their data, even if we don't need the machines. Instead of pursuing the best experience, we try to make one device do everything.

I do this constantly. I'll spend 15 minutes fighting with autocorrect on my iPhone to chat with a friend, all the while sitting in front of my MacBook Air. I'll tote the computer across the house to read an article rather than pick up an iPad and load the tab there. Currently, a few tools enable cross-device usage, but we're stubborn creatures: If it's not easy, we're not doing it. We'd rather compromise.

Apple doesn't like compromise; Apple strives for perfection and tech that "just works." That's not to say every Apple product or service comes out fully formed. But the company's stated goal has always been to make the best experience for its customers—to help users tell the best stories they can, with the best tools.

Our stories are expanding, however. We're no longer tethered to desks and ethernet connections. How do we tie stories together? How do we unify our experiences in the world with the work we do at home? These are the questions that Apple hopes to answer with its new Continuity feature.

A FRAMEWORK FOR THE FUTURE

Apple has spent 30 years making the personal computer, phone, and tablet essential to building your

connected life. And from the looks of things, it's going to spend the next 30 years unifying those devices to help you tell your story wherever you may be, whatever you're using.

With Continuity, Apple is building a framework in which each device exists in its own space, doing what it does best. In this world, you can fit all your work on an iPhone or an iPad—but why compromise when you can instead work on whatever device is best for the task at hand?

We've seen Apple experiment with this idea already—think cross-platform GarageBand projects, Messages, AirPlay, iCloud Tabs. With iOS 8 and OS X Yosemite, the Continuity framework will continue to bring this experimental world into our real one. Swipe news stories from your iPad to your Mac. Answer calls on your computer. Start email messages in one place and finish them in another.

NO MORE LIMITATIONS

We don't know yet whether Continuity will "just work"—WWDC keynote demos are one thing, millions of people using a technology is another. We've seen Apple stumble and fail in this respect. But it has been laying the groundwork for this shift for several years, and there will always be room to grow and improve.

Apple is making a promise here: The future of computing should be free of file limitations and processor speeds, of screen sizes and portability concerns. It should render the hardware invisible and put the focus on the work you're doing.

And it's a future where the sales numbers of the Next Big Thing won't matter much. Instead, the key will be the Apple ecosystem—the users who tap into it, and the stories they want to tell.

If Continuity works well, those are going to be some insanely great tales. ■



BLURRED LINES Work the way you want, on the device that's best for the task at hand.



Discover apps with Explore
Improved App Store search
App bundles
App previews
Free TestFlight beta testing



Restoring Order to the App Store

BY PHILIP MICHAELS

At this year's WWDC keynote, CEO Tim Cook noted that the App Store hosts more than 1.2 million apps, with total downloads now topping 75 billion.

The size of the App Store is certainly one of the biggest selling points of iOS. It's also a growing headache. Apple

seems to recognize that perusing the App Store is becoming more of a pain, because the company will be making some changes. During the keynote, Apple framed the alterations as being part of iOS 8's new developer tools, but make no mistake: These changes are every bit as important to users.

First, let's recap the problem. Unless you know an app's exact name, shopping can be hit or miss. (Sometimes even knowing the name isn't enough.) Searching with a general description is unlikely to yield fruit. You could try the Customers Also Bought section for related apps, but that assumes the wisdom of crowds has any better idea than you of what to download.
























In short, it's increasingly hard to track down apps through anything other than trial and (mostly) error. And Apple seems to have decided enough's enough.

So how does Apple fix things? It starts with adding an Explore tab. Subcategories may figure prominently: The Productivity section, for instance, might make it easier to differentiate note-taking apps, task managers, calendar tools, and other efficiency-boosting apps. Apple also vows to add trending-search features, as well as a continuous-scrolling feature.

Another welcome addition is app bundles: Developers will be able to combine multiple, perhaps complementary, apps for a discounted price, and users will be able to buy them all with one tap. Developers will be able to add video previews to their App Store entries, too, and Apple plans to incorporate the TestFlight beta service, which will let app makers invite users to test out apps.

Judging from these plans, Apple seems to recognize that although it's good to have a massive App Store, bringing some order to the chaos is just as valuable. ■

iOS DEVICES: CURRENT LINEUP

PRODUCT	SPECS	RATING	PRICE ¹	DISPLAY	MORE INFO
 iPad Air ²	16GB	Wi-Fi, 	Wi-Fi: \$499; Wi-Fi and cellular: \$629	9.7-inch color (Retina)	go.macworld.com/ipadair
	32GB	Wi-Fi, 	Wi-Fi: \$599; Wi-Fi and cellular: \$729	9.7-inch color (Retina)	go.macworld.com/ipadair
	64GB	Wi-Fi, 	Wi-Fi: \$699; Wi-Fi and cellular: \$829	9.7-inch color (Retina)	go.macworld.com/ipadair
	128GB	Wi-Fi, 	Wi-Fi: \$799; Wi-Fi and cellular: \$929	9.7-inch color (Retina)	go.macworld.com/ipadair
 iPad 4th Generation	16GB	Wi-Fi, 	Wi-Fi: \$399; Wi-Fi and cellular: \$529	9.7-inch color (Retina)	go.macworld.com/ipad4
 iPad Mini	16GB	Wi-Fi, 	Wi-Fi: \$299; Wi-Fi and cellular: \$429	7.9-inch color	go.macworld.com/minirev
	16GB	Wi-Fi, 	Wi-Fi: \$399; Wi-Fi and cellular: \$529	7.9-inch color (Retina)	go.macworld.com/miniretina
	32GB	Wi-Fi, 	Wi-Fi: \$499; Wi-Fi and cellular: \$629	7.9-inch color (Retina)	go.macworld.com/miniretina
	64GB	Wi-Fi, 	Wi-Fi: \$599; Wi-Fi and cellular: \$729	7.9-inch color (Retina)	go.macworld.com/miniretina
 iPhone 4s, 5c, and 5s	8GB 4s ³		Free	3.5-inch color (Retina)	go.macworld.com/iphone4s
	16GB 5c ⁴		\$99	4-inch color (Retina)	go.macworld.com/iphone5c
	32GB 5c ⁴		\$199	4-inch color (Retina)	go.macworld.com/iphone5c
	16GB 5s ⁴		\$199	4-inch color (Retina)	go.macworld.com/iphone5s
	32GB 5s ⁴		\$299	4-inch color (Retina)	go.macworld.com/iphone5s
 iPod Touch 5th Generation	64GB 5s ⁴		\$399	4-inch color (Retina)	go.macworld.com/iphone5s
	16GB		\$199	4-inch color (Retina)	go.macworld.com/touch516
	32GB		\$249	4-inch color (Retina)	go.macworld.com/touch5
	64GB		\$299	4-inch color (Retina)	go.macworld.com/touch5

¹All prices are Apple's prices. ² Separate Wi-Fi-and-cellular iPad models are available for AT&T's network and for Verizon's. ³ This phone is available only with an AT&T plan. ⁴ These models are available with an AT&T, Sprint, or Verizon plan.

Study: iOS Apps Top Browsers for Watching TV Online

BY JAMES CARELESS

The revolution will be televised. And if you're watching it online, chances are good you'll be doing so on an iOS app.

That's just one of the fascinating conclusions drawn from an Adobe quarterly report on video consumption. The "U.S. Digital Video Benchmark" (PDF; go.macworld.com/digvideo) for the first three months of 2014 compiles and analyzes both online TV (TV Everywhere) and nonauthenticated online video trends.

According to Adobe, iOS apps now top browsers as the most popular access method for TV Everywhere content. iOS apps grabbed a 43 percent share of that market in the first quarter of 2014. Browsers came in second with a 36 percent share—down from 47 percent a year ago.

MOVING TO MOBILE

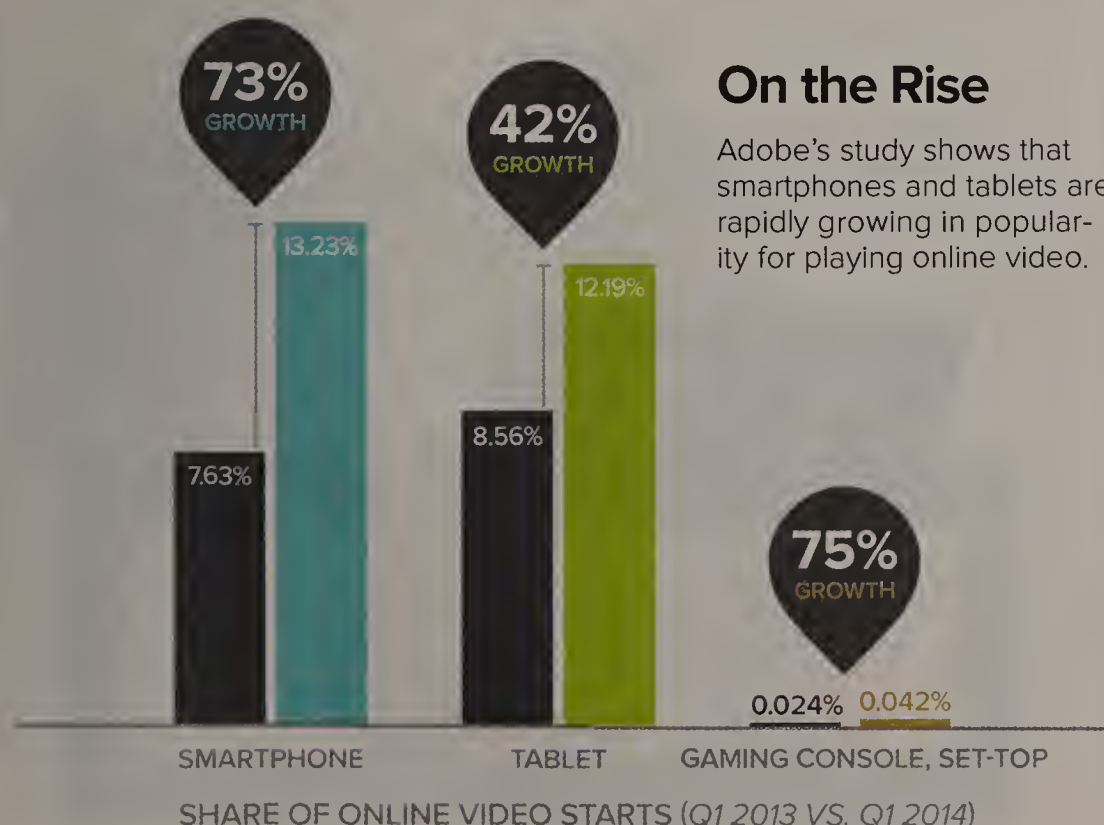
This seismic shift signals that the move from the desktop to mobile devices is now well under way for online-TV viewers. Android apps also grew in the first quarter, grabbing a 15 percent

share, while gaming platforms and set-top boxes hit a 6 percent share, up from 1 percent the year before.

Another staggering figure from the report: Overall online TV consumption across all platforms grew 246 percent year-over-year, with March 2014 setting a new record in total authentications.

"More than one-fifth of all pay-TV households in the U.S. now watch TV online across screens," says Jeremy Helfand, VP of Adobe Primetime. "With rapidly rising consumer expectations for TV across devices, the TV industry is moving through a rapid transformation and finding new ways to bring TV to whatever screen audiences want to watch."

Adobe's study also noted that 80 percent of children's content was viewed on iOS apps, while browsers played 50 percent of news videos. This data suggests that younger users are more likely to use mobile platforms for viewing. If true, that's bad news for conventional TV broadcasters (and TV makers) hoping to attract and retain audiences with 4K broadcasts. ■



What's New at the App Store



PDF EXPERT

With its latest update, Readdle's \$10 app for PDF reading and annotation (go.macworld.com/pdfexpert) is now universal, so you can buy it once for both iPad and iPhone. Improvements include a continuous vertical scroll mode, support for calculations in LiveCycle Designer forms, and faster performance.—DAN MOREN



SXPd

This \$2 iPad game (go.macworld.com/sxpd) resembles a black-and-white graphic novel of unusual intensity. Its developer, Little Chicken Game Company, says it's the world's first true game-comic book hybrid. In a future American state called New Royale, an investigative unit must find a weapon of mass destruction before it triggers. Six chapters are available; the design is courtesy of DC Comics artist Duke Migheten.—JOEL MATHIS



GOGOBOT

The developers of this trip-planning app (go.macworld.com/gogobot) have revamped it, starting with a new user interface and expanding from there. Other added features include the ability to create and organize travel itineraries, as well as a weather-forecasting function that helps you choose activities according to the likelihood of rain.—JOEL MATHIS



SCREENSHOTTER

Most people use Dropbox or a similar app to save and share screenshots from an iPhone. Cluster Labs' free Screenshotter (go.macworld.com/screenshotter) is designed for the task: Open the app and give it access to your Camera Roll, and it separates your screenshots from your regular photos.—JOEL MATHIS

Elegant iOS Accessories

This month's roundup of gear for your iOS devices spotlights some attractively designed add-ons, including an old-fashioned, tube-powered speaker with a 21st-century twist.

BY JOEL MATHIS

Duo

The \$649 Duo (go.macworld.com/tubecoreduo) combines the classic warmth of tube-driven speakers with the modern convenience of Bluetooth streaming audio. It includes a 48V Class A preamp that Tubecore says “produces rich bass, warm mids and crystal clear highs.”



ALUCABLE FLAT

The \$20 AluCable Flat (go.macworld.com/alucable) is a 4-foot, flat Lightning-to-USB cable for the whole universe of iOS devices. It comes in gray, gold, and blue, and is, according to Just Mobile, “a must-have for design-conscious users.”

CombiTray

Made in cherry, maple, or walnut, Woody's TabletTrays have an inset for your iPad's Bluetooth keyboard. The CombiTray variant (about \$138; go.macworld.com/woody), shown here, also provides a place for Apple's trackpad.





Apple TV Station

We've seen products like this before, but it's too lovely to resist mentioning. The \$40 iSkelter Apple TV Station (go.macworld.com/apptvstation) is an elegant bamboo docking station for your Apple TV and its remote control.

BT-4000

The \$100 RichardSolo BT-4000 Rechargeable Wireless Boombox (go.macworld.com/bt4000) streams music wirelessly from your iOS device, but it also includes an FM radio and a rechargeable 2100-mAh battery, and it has a 5-watt stereo amplifier for those times when you want to feel the beat surging in your veins.



S1

The \$35 Shoulderpod S1 (go.macworld.com/shoulderpod) helps you make the best use of your iPhone as a camera. This accessory can mount to a tripod, nestle in your hand in a “filmmaker grip,” or break down into a stationary travel stand. You can slip it into your pocket or hang it from a belt strap, too.

Reviews

The Latest iOS Products
Reviewed & Rated

PUZZLE GAME

Hitman Go: From Violent Shooter to Surreal Puzzler

**Hitman Go
for iPad**



PRICE:
\$5

COMPANY:
Square Enix
hitman.com

The Hitman series of violent and visually sumptuous stealth-shooting games has arrived on

the iPad—in the form of *Hitman Go*, a mannered, turn-based puzzle game.

Hitman Go doesn't play like a board game. But its rendition is evocative of one, and the visuals are quietly stunning. Rigid playing pieces represent Agent 47, guards he must evade or kill, and the target.



You move one space (or into a shortcut), and guards move in response. You may find hiding places, locked doors, disguises, or firearms, but each time you must reach the objective

while avoiding death at the hands of a guard.

At each level, you get extra tasks: For instance, you must finish within a certain number of steps or grab a hidden

briefcase. But it often seems impossible to accomplish all these tasks in one go.

Once you've grasped the underlying patterns, the game becomes more of a mechanical exercise. It offers little in the way of multiple solutions. Occasionally it drops you into a Zen state, where solutions surface organically. The wonderful presentation strives to make up for the game's limitations. But you can find uglier puzzle games that are a lot more fun. I'm a bit disappointed that *Hitman Go* is a merely solid example of the genre.—DAVID PRICE

MUSIC APP

Hum: A Simple and Stylish Tool for Songwriters

Hum



PRICE:
\$2

COMPANY:
Just Hum
justhum.com

When I started writing songs in the mid-nineties, I jotted them down on scraps of

paper between classes and hummed into a tape recorder. Later, as iPhones became my recording device of choice, the Voice Memos app served as my lyrics storage engine: I'd record something there, and then transcribe it in plain text and store it in Dropbox. But I had no good way to associate snippets with my lyrics.

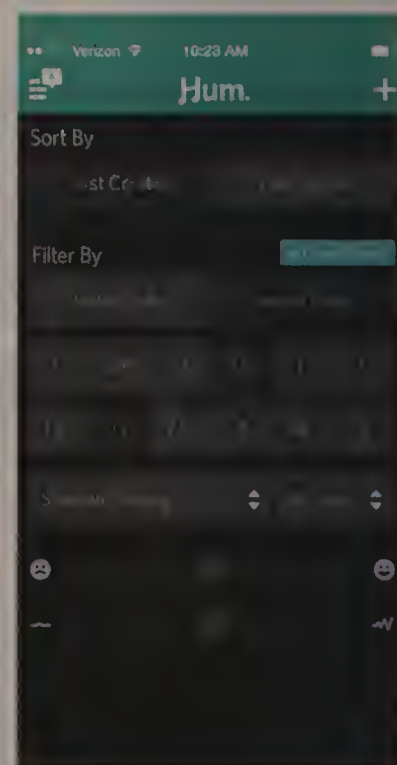
That's why I'm loving Hum: It combines the audio storage of Voice Memos with a plain-text app to provide a spot where you can note lyric ideas and song snippets, as well as add the key, the tuning, and whether you're using a capo; in addition, you can rate the song's mood and volume, and add notes.

It's simple to use, and it's wrapped in beautiful icons and a lovely teal color scheme. The separation of your lyrics from your notes about lyrics is a wonderful feature, too.

Dropbox sync is coming soon, the developers say. I'd

also like the ability to associate multiple recordings with a single entry—I'd rather not have to make "Bridges v1," "Bridges v2," and so on. (And if I do have to, I'd like to be able to clone an entry to carry the lyrics over.) The app has no way to import recordings from other sources into a song, either; granted, I'm not entirely sure if that's possible via iOS's Open In sheet.

But those are quibbles. For people who find themselves humming the perfect tune, this app is a great tool, and I can't wait to see what comes next.—SERENITY CALDWELL



Moju Adds Literal Motion to Stop-Motion Imagery

Moju



PRICE:
Free

COMPANY:
Moju Labs
getmoju.com

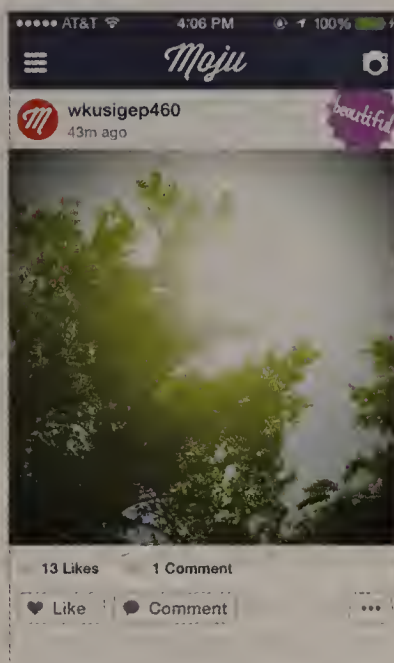
A mix of Instagram and Vine, Moju offers a public timeline of moving photos. The magic lies in how they play: Tilting your device left and right takes you through 24 frames of stop-motion delight. The timeline runs both forward and backward, which can lead to some amusing playback.

Creating a post is as much fun as viewing one: Tapping the camera button produces a recording screen with a capture button, 24 dots, and a settings button. Tapping the capture button snaps a photo;

hold it to take images in quick succession. Like similar apps, Moju offers a “ghosting” mode (which displays your previous shot at half opacity) for lining up your next shot. You can also add a grid, flip from the front camera to the back, or undo a shot.

I do wish you could preview your work within the capture screen. And you can undo shots only in order—you can’t remove an image from the middle of the animation.

You can use any of 11 included filters, which are fun without being excessively Instagrammy. Then you can add a comment and share on Facebook, Twitter, or the public Moju feed (or make



the post private). Brilliantly, Moju posts display in their native “twist to view” form on a mobile device; on a desktop, you mouse over the animation.

The sharing features are well built, with an attractive Web view, though Moju currently offers no way to view profiles on the desktop, as well as no embedding (which is a bit of a disappointment). Because Moju doesn’t yet allow you to follow users, its main timeline is crucial: The posts have to be engaging, fun, and (preferably) family-friendly. Thankfully, Moju’s staff seems to be good at maintaining the tone.

As is typical of startup-funded apps, Moju is currently free on the App Store and has no in-app advertising.

If you’re a fan of fun photo or video apps, or a stop-motion enthusiast, give Moju a try.—SERENITY CALDWELL

NYT Crossword Gets Its Appeal Across (and Down)

The New York Times Crossword



PRICE:
Free
(subscription available)

COMPANY:
The New York Times
go.macworld.com/nytcross

Among crosswords, the daily New York Times puzzle is the gold standard. And if it’s the daily Times puzzle you want, this app is the way to go.

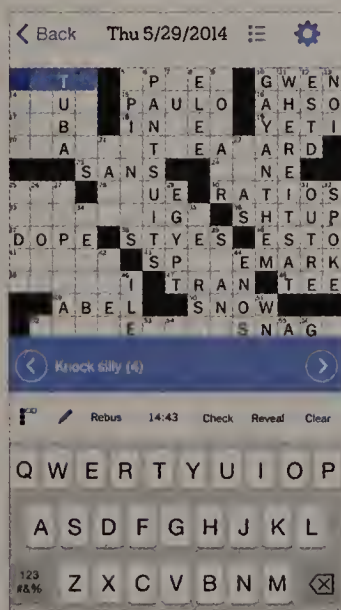
Although the app is a free download and offers a full-featured two-week trial, getting the most out of it requires a subscription; plans range from \$4 a month to \$17 a year.

Version 2.0’s iOS 7-inspired design is an improvement. The main screen prompts you to do today’s puzzle and gives

you quick access to downloadable puzzle packs as well as to a calendar of past puzzles. (And so far it has fewer pop-up ads.)

New options allow you to skip filled squares, as well as to jump back to the first blank or to the next clue when you select a word. You can enlarge clue text size, too, and you can turn off the built-in clock if you wish. (Me, I like the time pressure.)

Another plus: The app now



clearly displays the name of the Sunday puzzle in the menu bar. That can be a big help, since the title is often a clue to the Sunday puzzle’s theme.

The best addition is the long-awaited arrival of syncing. When you log in to

your Times account from the app, you can sync your puzzle progress not only between the iOS clients on multiple devices, but also with the Times’ Web-based crossword app.

I have one major complaint about the 2.0 update: Upon downloading it, I found that all the records of my previous puzzles were wiped clean, including progress for puzzles I was working on. Here’s hoping the next version takes a more permanent approach to older puzzles—and perhaps even integrates statistics to help us solvers improve.

Small glitches crop up, too. A few of the special keyboard keys don’t look particularly sharp, and I miss the option to clear only the current clue instead of wiping the puzzle.

Aside from those details, I would describe this update as a nine-letter word for “extremely good.”—DAN MOREN

UTILITY

Prompt Neatly Mends the Command Line With iOS

Prompt
1.5.4



PRICE:
\$8

COMPANY:
Panic
panic.com

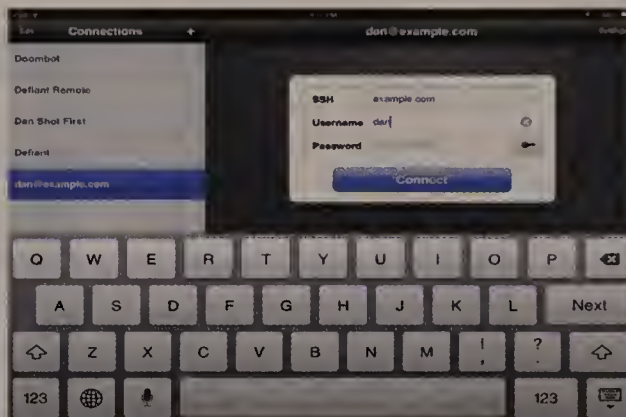
We can't escape the command line; it lurks beneath all our modern operating systems. But if you can't

beat 'em, join 'em, I say—and that's why I love Prompt.

Should you ever need to use telnet or secure shell (SSH) via your iOS device, Prompt is where it's at. I've used Prompt for connecting to my home computer while I'm thousands of miles away, logging in to my remote Web server, and much more.

You can store frequently used connections, including login info, initial commands, and terminal types. You can also use multiple connections at once.

In addition to giving you quick access to command-line keys like <Control>, <Esc>, and <Tab>, Prompt's toolbar offers four slots that you can customize with standard keyboard characters. Tapping the four-way arrow key offers access to cursor keys, and another tap produces <Function>, <Page Up>, and <Page



Down>. (On the iPad, you can swipe between the customizable special keys and function keys, while the cursor keys are always available.)

Further options include a setting to activate a passcode lock for the app. Prompt also supports SSH key pairs for

remote connections—assuming you know how to set them up.

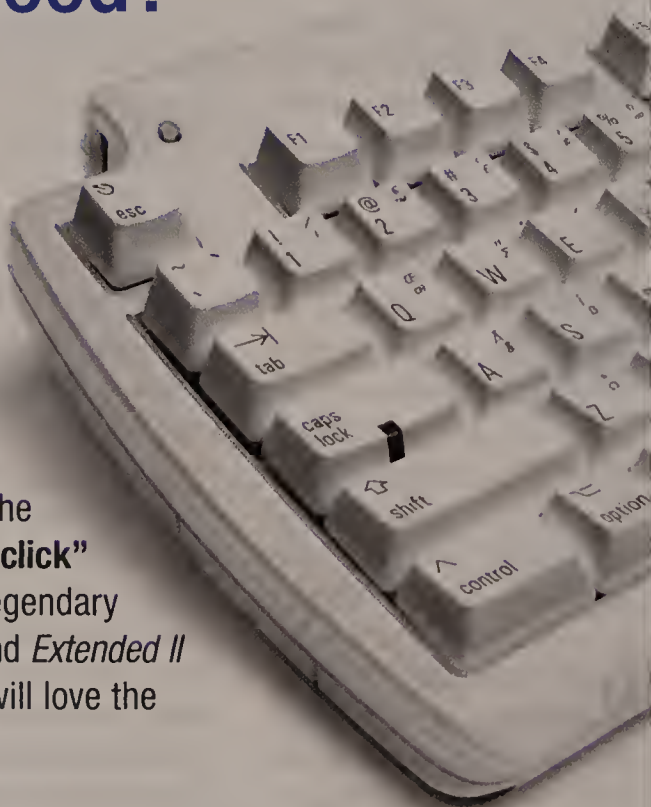
For the most part, Prompt stays out of your way. Its design is simple and unobtrusive, even if it might be in need of a coat of iOS 7-style paint.

About the only feature I'd like to see added is

the ability to sync connections (and thus passwords and keys) between my iPhone and iPad.

At \$8, Prompt is one of the more expensive SSH clients. But it offers solid engineering, an attractive interface, and great usability.—DAN MOREN

Remember when typing felt good?



Mac users who crave the satisfying "click" of Apple's legendary *Extended* and *Extended II* keyboards will love the Tactile Pro.

tactilepro www.matias.ca

For **Juri**, the big letter on the box is a good start. But sometimes she wants to know more about the games **Sean** and **Maia** want to play. And now she can, **right from her phone**, right from the store.

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Learn more at ESRB.org/mobile.

Juri P
Lakeside, CA



STRATEGY GAME

Space Hulk: A Vicious and Tense Sci-Fi Board Game

Space Hulk



PRICE:
\$10

COMPANY:
Full Control
Studios
spacehulk-
game.com

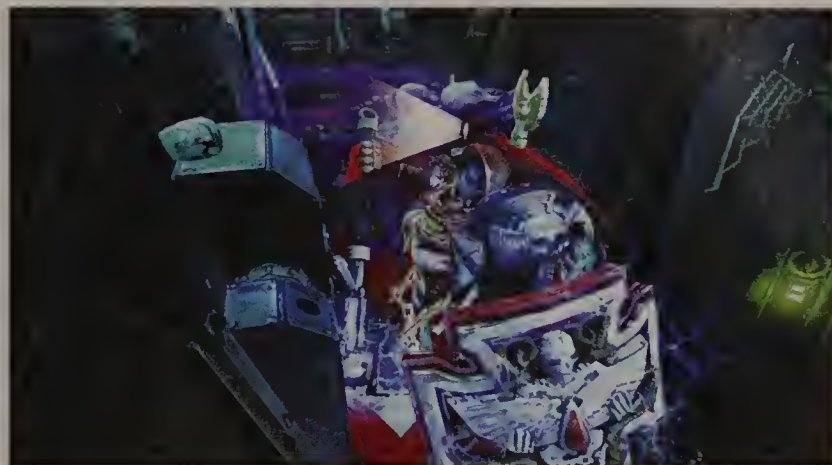
Based on a great 1980s board game, the two-player *Space Hulk* for iPad is a game of rare simplicity, elegance, and tension.

You can play against the computer, but local and online multiplayer options are available. One player controls a handful of space marines clanking around a derelict spaceship. The other gets an unlimited number of vicious aliens called Genestealers.

The gameplay is as delight-

fully nerve-shredding as ever. Motion-detector blips represent one, two, or three aliens, leaving the human player in constant doubt. In turn, the marines get a random number of bonus action points, and this number is revealed to the Genestealer player only when the points run out. The greatest source of stress derives from "overwatch," a mode in which the humans fire reflexively in response to movement.

The game largely depends on dice rolls. (I might have liked the app to present the dice more dramatically and visually.) Every game is different, and beginners always have a



chance, but it can be frustrating when you roll low numbers. Still, sound strategy generally wins, and luck evens out. Playing the Genestealers is less compelling than playing the marines, but presumably this is why the AI takes that role.

In-app purchases unlock new missions, but the bundled ones should last awhile.

Space Hulk is an emotional experience that's hard to match. The source material is superb, and this is a strong iPad adaptation.—DAVID PRICE

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PLATFORM GAME

Thomas Was Alone: An Ode to Artificial Intelligence

Thomas Was Alone



PRICE:
\$9

COMPANY:
Mike Bithell
go.macworld.
com/thomas

At a birthday party last year, I ended up in front of a PlayStation 3, watching my friend play *Thomas Was Alone*, an eerily

beautiful game about sentient colored blocks journeying to the outside world. We paused for cake, and the journey remained unfinished for me—until the game's port to the iPad.

You guide the blocks over platforms, acid, and spikes to reach portals. Been there, done that, fallen to my death a thousand times because I still



don't know how to time double jumps. But *Thomas Was Alone* plays with such expectations, throwing in gravity deformations, new abilities, and "shifters" that alter a block's abilities. Pair those twists with an excellent David Housden soundtrack, narra-

tion by the delightfully Scottish Danny Wallace, and a carefully crafted story, and the game comes to life. If you love *Monument Valley*, *Portal*, and other creepy, quirky puzzlers, you need to play this game.

A few areas aren't quite polished and may annoy

players who lack excellent double-jump skills; portions of level 6 proved frustrating to me until I switched from the game's "digital" controls to the hidden "analog" controls, which allow you to tap anywhere on the right side to jump, and to slide your thumb anywhere on the left to move.

But my occasional timing issues faded into the background when I consider the game as a whole; it held me captive for hours last year, and for many hours more when I played it on the iPad. If you're looking for a puzzle platformer to keep you up late into the night, smiling all the way, this is it.—SERENITY CALDWELL

PHOTO APP

VSCO Cam: Snap, Edit, and Share in a Single App

VSCO Cam



PRICE:
Free

COMPANY:
Visual Supply
Company
vSCO.CO

VSCO Cam combines picture taking, image editing, and online photo sharing in one snazzy package.

The app takes a little getting used to, in part because it does so many things, and in part because the interface mostly consists of wordless iconography. Once you're in its camera mode, though, it's a joy to use. You can toggle the flash, change the display (showing a line-of-thirds grid, the horizon level, or nothing), lock the white balance, and choose a mode that allows

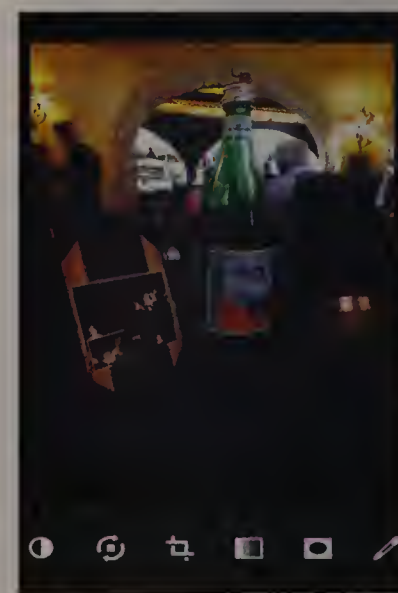
you to take the photo by tapping the screen instead of the shutter release.

The app's robust editing tools—15 in all—give you the opportunity to adjust exposure level, color temperature, contrast, saturation, sharpening, and cropping, as well as to make less-common tweaks.

You also get about a dozen filters, each of which you can fine-tune with an intensity slider; you can add more via in-app purchase. Although many of the effects are nice, each one has a useless label like B1, C1, or G3—only when you select a particular effect and tap it again do you see that it also has a slightly less obscure name such as Moody, Mellow, or Classic.

VSCO Cam uses its own camera roll. You can add the photos you take with it to your regular Camera Roll, or keep them separate. You can also import single photos for editing.

The app lets you share images through Facebook, Instagram, and Twitter, but it desperately wants you to submit images to the Grid, a curated online gallery. Getting shots into the public Grid requires passing a mysterious vetting process; to make your photos available to friends, you can just share a URL for images in your own personal Grid. The Grid is a nice idea, but you can't promote, like, or comment on any images, nor can you discover artists



except in a rudimentary way.

VSCO Cam is a great camera and editing app with a half-baked online sharing feature. It needs only to smooth the rough edges in its interface.—DAVE JOHNSON

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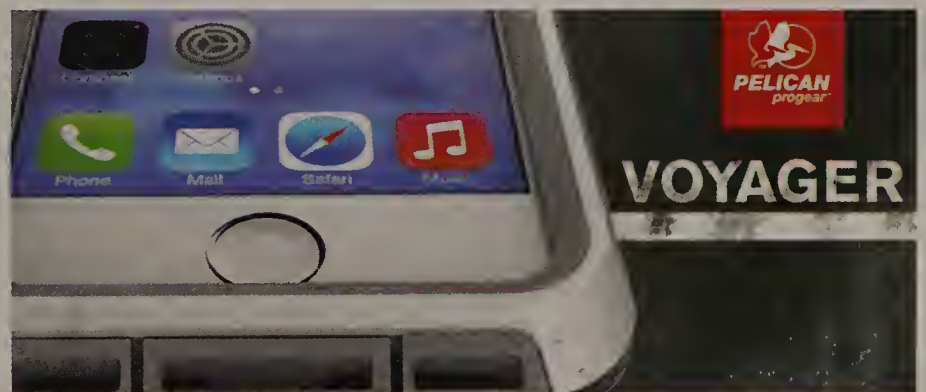
reflectorapp.com



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globaldelight.com/boom



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QNAP NAS: Your VERY OWN private cloud to store, share and stream your favorite multi-media files!

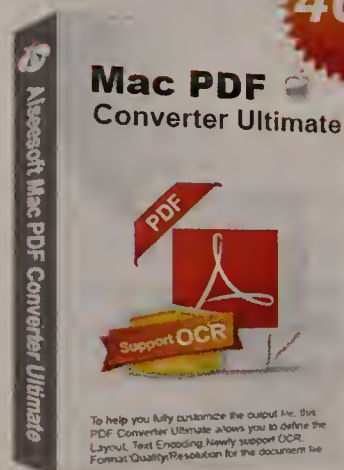
Why settle for just any boring storage device when you can have storage that lets you store, share your favorite movies, videos, music, photos and access them on your mobile device or Smart TV? QNAP NAS is expanding the limits of home entertainment by becoming your personal media hub and secure storage for your media files.

qnap.com



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www.netis-systems.com/en/macworld/BTS2014.html



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Macally's iKey30II and iKeyLTII Wired iPad Keyboards Especially for K-12 Classrooms

The Macally wired iPad keyboards with 30-pin or Lightning connectors include a 5yr warranty, are compliant with Common Core, PARCC and SBA technology requirements and are approved Apple third party education accessories. For more info visit www.macally.com or email edu@macally.com. Macally, Helping K-12 students prepare for their next steps in life.

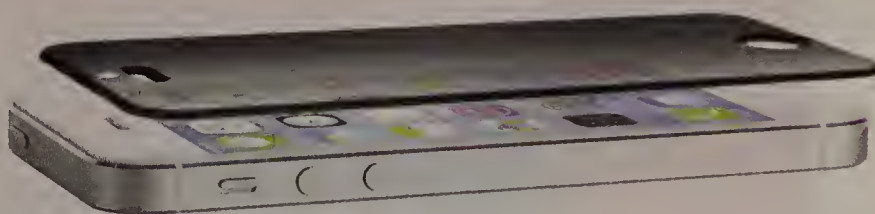
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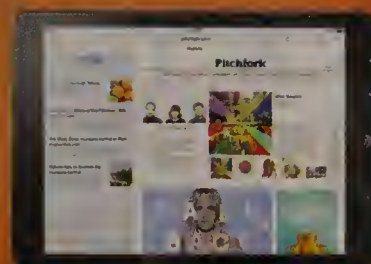
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WHAT YOU NEED TO KNOW: OS X YOSEMITE AND iOS 8

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By Macworld Staff | Photography by Peter Belanger

OS X YOSEMITE FAQ:

BIG CHANGES COMING TO YOUR MAC THIS FALL



NEW TRANSPARENCY The new user interface in OS X Yosemite inherits some elements of iOS, including a greater use of translucency.

➔ Apple has officially previewed this year's update to OS X, and we know its California place name: Yosemite. But although developers have access to an early version of the new OS now, most users will have to wait until the fall to dive in (unless they sign up for, and get into,

the public beta program (go.macworld.com/beta). So lots of questions are swirling around about OS X Yosemite. Based on what we learned at WWDC (and from testing the early OS on a system that Apple loaned to *Macworld's* Jason Snell), here are answers to some of the most common questions.

THE INTERFACE

What's this I hear about a revamped interface?

Taking a cue from iOS 7, Yosemite features translucency not only on the menu bar (which you can adjust), but also on windows and other

small interface elements.

You'll also find that Apple has dispensed with the 3D design elements of old in favor of flatter, more colorful surfaces. And toolbars are simpler. In Safari, for example, the Favorites bar no longer appears by default; instead, you summon Favor-

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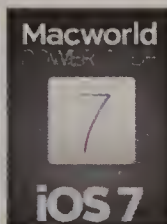
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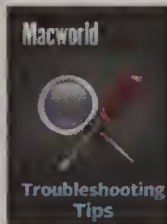
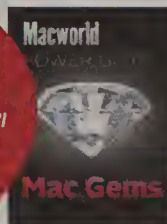
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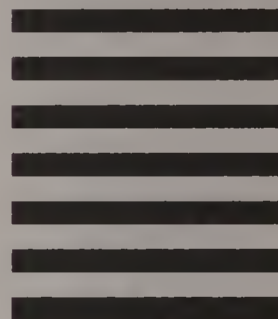
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ites by clicking in a window's smart-search field. Yosemite also uses a new system font, Helvetica Neue.

Is there a way to turn off window translucency?

As in iOS 8, you'll be able to reduce the degree of transparency by opening System Preferences and choosing Accessibility → Display → Reduce Transparency.

How is Helvetica Neue as the system font?

It's a bit of a jolt at first glance, but the thinner font matches the overall look of Yosemite better than Mavericks's Lucida Grande would have.

The Dock looks oddly new and yet familiar. What's up with that?

Back in OS X 10.4, the Dock was two-dimensional, with a translucent background that separated app icons from the desktop. In OS X 10.5, however, Apple changed the Dock's bottom position to render in 3D (unless you performed a Terminal tweak). With Yosemite's new flat UI, the Dock is 2D once again. We're pleased with what we've

seen so far, and it behaves just like the Dock we're used to: You will be able to resize and reposition it, hide it, and so on.

I've heard that Apple changed the 'stoplight' buttons in the upper-left corner of windows. Are they vertical again?

No, still horizontal, but many windows now integrate them into the toolbar instead of above it, saving screen real estate. They also have the same flat look as the rest of the interface. To longtime Mac users, the experience may feel odd at first, but it should be a nice change.

In addition, Apple has tweaked the behavior of the green button. Previously, it was a zoom toggle. In Yosemite,

the green button acts as a full-screen toggle: Individual windows zoom to the width of the screen when you click the button, while the main window of an app enters full-screen mode. Given Apple's current emphasis on full-screen mode, this change makes a lot of sense and reduces clutter in the toolbar.

Are full-screen apps dead? I don't see the little double-arrow icon at the top of windows.

Full-screen mode is alive and well. But Apple has done away with that double-arrow button and instead has changed the functionality of the green "stoplight" button, as we mentioned above. The Full Screen keyboard shortcut

(⌘ -<Control>-F) still works within supported apps, such as Safari, Mail, and Calendar. When you hold down the <Option> key, the green button reverts to its more familiar function of expanding your window.

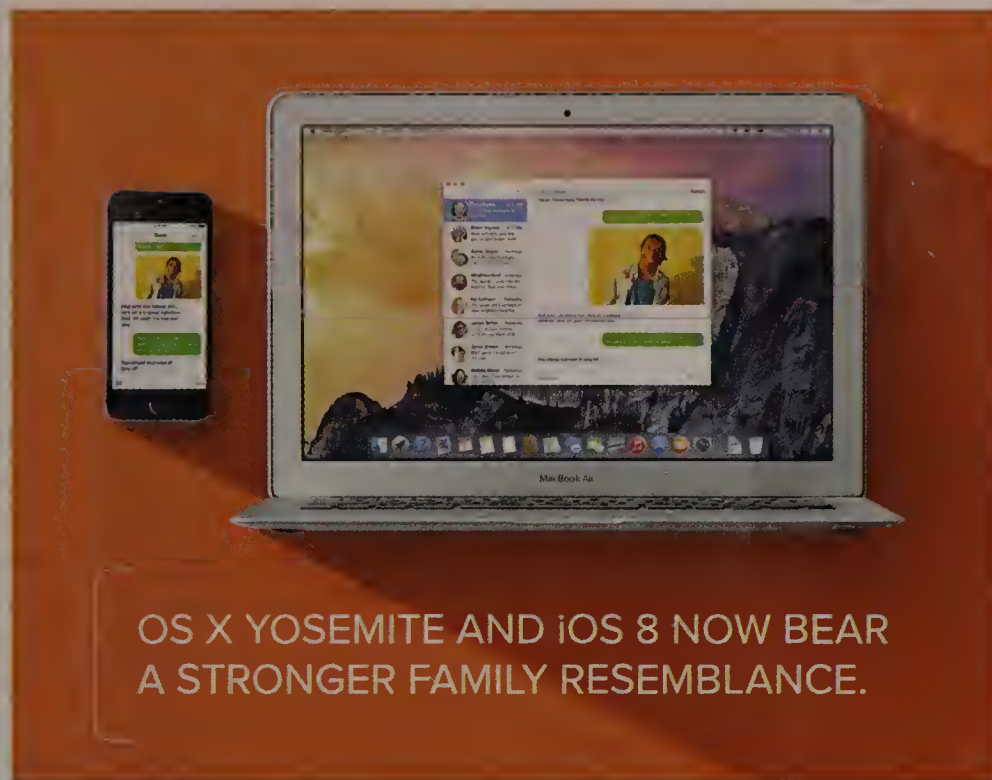
What's Dark mode?

The preview version of Yosemite we've seen doesn't offer Dark mode. But chances are good that it'll appear in future betas, since

Apple did preview it at the keynote. It appears to darken the menu bar and associated menus, with light text on a dark background.

Does Yosemite now resemble iOS?

While Yosemite does, as we mentioned, pick up some iOS 7 visual effects—namely the translucency, brighter colors, flatter icons, and typography—it does so in a way that feels like an evolution of OS X, rather than merely an aping of iOS. Some options in programs such as Safari (the Favorites bar, for instance) are hidden by default, but power users can easily access them. And you can always dial down the translucency.

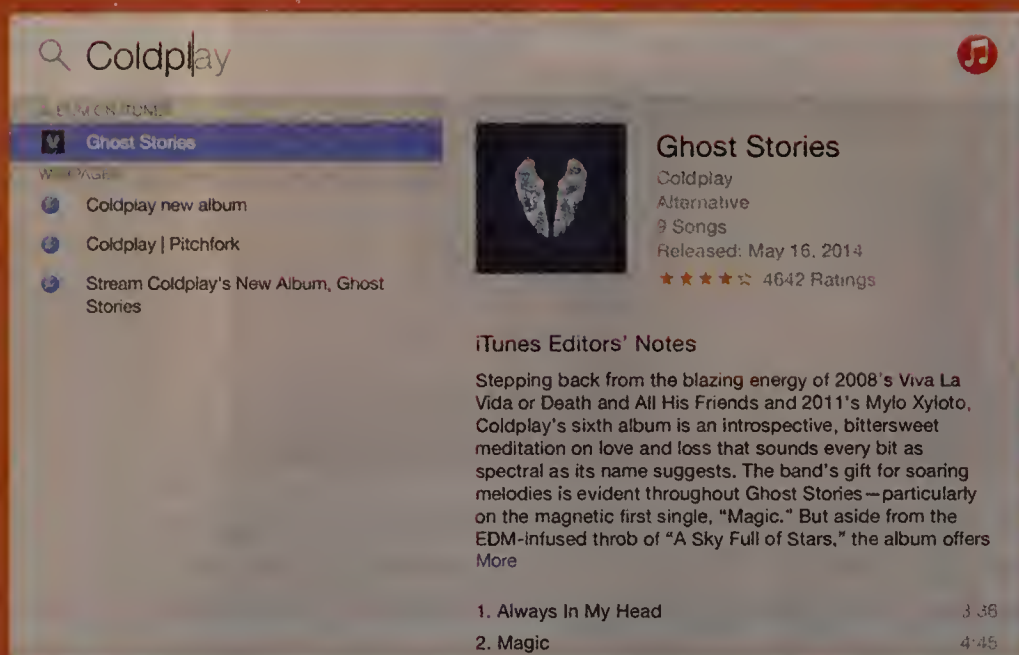


OS X YOSEMITE AND iOS 8 NOW BEAR A STRONGER FAMILY RESEMBLANCE.

THE DOCK IN OS X YOSEMITE ADOPTS A FLATTER, TWO-DIMENSIONAL LOOK.



SPOTLIGHT HAS ACCESS TO A WIDER ARRAY OF INFORMATION, INCLUDING ONLINE SOURCES.



SYSTEM SERVICES

What has changed in Spotlight?

Spotlight can now tap into more information sources. Besides the files, apps, messages, and other data Spotlight can already find, searches now also include Wikipedia, Bing, Maps, news, movie listings, and the iTunes, Mac App, and iBooks stores. The Spotlight key command remains ⌘ -<Space>; if you do a normal Finder search by pressing ⌘ -F, the results won't include online sources.

Spotlight is becoming more interactive, too. You'll be able to send email, make a phone call, or get directions right from the search interface.

Can I have multiple instances of Spotlight?

No, but you may see certain Spotlight search results when typing in a Safari window.

Will I want to replace my third-party application launcher with Spotlight?

The improved Spotlight should satisfy regular users—it's even better for making quick local queries. But advanced users who rely on launchers to do productivity-boosting tasks will want to stick with those tools.

What does System Preferences look like?

Other than sporting new icons and fonts, System Preferences looks much the

same. The only new pane in there is Extensions, where you enable and disable the extensions that show up in the Services and Share menus plus the widgets for Notifications' Today view.

With the introduction of extensions and widgets, has Apple finally killed off Dashboard?

Surprisingly, Dashboard remains, but it is switched off by default. You can enable it within System Preferences' Mission Control pane. It also exists as a separate app, available in the Applications folder, as always. But Apple is strongly advising developers who still depend on Dashboard to avoid using it. We'll be surprised if Dashboard survives past this release.

What has changed in Notification Center?

Support for third-party widgets is the big news in Notification Center. They will let developers create little code snippets that display things like the current weather, sports scores, online-auction bidding, and more. In addition, Notification Center takes a page from iOS and offers the Today view, which provides a summary of your day's events, reminders, and birthdays, along with calendar events for tomorrow.

iCLOUD AND CONNECTIVITY

How is OS X more closely connected to my iOS devices?

Your Mac and iOS devices will soon work together in a couple of ways. These new capabilities center on iCloud Drive and a cluster of features Apple calls Continuity (see *iOS Central* on page 33 for more). iCloud Drive offers you a big Dropbox-like locker for all your app documents and projects; Continuity provides an integrated framework for you to seamlessly access a variety of services—Phone, Handoff, Instant Hotspot, AirDrop, and SMS—as you move between your Mac and iOS devices.

What does the Phone part of Continuity do?

Think of your Mac as a big speakerphone and dialer for your phone. If your phone is within Bluetooth range of your Mac, you'll see caller ID information on your Mac's screen whenever your phone receives a call. You'll be able

to accept or decline the call right from your computer, and, if you answer, to talk and listen through your Mac. You'll also be able to initiate calls from your Mac by clicking on a phone number in Contacts, on a webpage, or in an email or text message.

Is there SMS support?

This is cool: If you upgrade your iPhone to iOS 8, you'll be able to push SMS messages (those "green bubble" texts from buddies who don't use an iPhone to send them) to your Mac or to other iOS devices, so you can write and reply to them on any device. You'll even be able to initiate SMS messages on the Mac.

What is Handoff?

Most of us now own more than one Apple device. Although iCloud already helps us sync data between the devices, switching back and forth is still rough. Handoff aims to smooth out the process: If you start writing an email or reading an article on your iPhone, you'll be able to pick up where you left off on your Mac.

In addition, Apple is providing a framework for third-party developers who want to have their apps talk to each other on iOS and the Mac.

And Instant Hotspot?

Currently, if your cellular carrier supports your iPhone's hotspot feature, you can configure your iPhone to create an ad hoc wireless connection to your Mac, letting it use your phone's data plan for Internet access. Under Yosemite, however, whenever your

iPhone is within Bluetooth range of your Mac, the phone automatically appears (along with its signal strength and battery level) in OS X's system-wide Wi-Fi menu. If you select your phone from this menu, the handset establishes a secure Wi-Fi hotspot and your Mac connects to it—no other action required. And your Mac automatically disconnects when it's not actively accessing the network, to preserve the phone's battery life.

What about AirDrop? Don't I already have that on my Mac?

You do, but now it's even better: AirDrop now works between iOS devices and Macs, meaning you'll be able

to exchange files between the two on an ad hoc basis, without the need for an Internet connection; you don't even have to be on the same local network. Need to get a photo to your Mac from your iPhone? Fire up AirDrop. Want to send a PDF from your Mac to your iPad? Same thing. And you'll also be able to limit your sharing so that only your iCloud contacts can see your share requests.

Is iCloud Drive really like a Dropbox folder?

Sort of: You'll have access to an iCloud folder on both Yosemite and iOS 8. That folder syncs with your Macs and iOS devices (presumably running either Yosemite or iOS

8). Any files you drag and drop into the folder will appear on your other devices.

It looks as though some preliminary support for selective sync may exist, via System Preferences → iCloud → Documents & Data Options. But iCloud Drive doesn't yet appear to have the same robust sync options as Dropbox offers, nor does it seem to support sharing public links to files or folders. This may change as the system gets closer to release, however.

How much space will I get with iCloud Drive?

You'll get 5GB for free, but in the fall you should be able to buy another 20GB for \$1 a month or 200GB for \$4.



APPS

What's new in Safari?

Safari windows are simplified. By default the browser will show you just a couple of navigation controls, a button for displaying or hiding the sidebar, the smart-search field, and Share and Tab View buttons. Also by default, when you click in the smart-search field, it will produce your favorites, represented as icons; just click an icon, and the associated site opens. The smart-search field doesn't show an entire URL by default, just the address of the server ("macworld.com," say) you're connected to. And the title of the page doesn't display at all unless you have multiple tabs open.

Browser tabs have changed as well. Although you'll still be able to see multiple tabs in a tab bar,

when you click the new Tab View button in the top-right corner of the toolbar, you'll see thumbnail previews of all your tabs in the main window. If you have multiple pages open from a single site, they'll be stacked within this view. Below these thumbnails are iCloud Tabs—the ones that are open on other devices associated with your Apple ID. Click a preview or one of these iCloud Tab links, and the page will open in Safari.

Safari is adding some of the same sources in its smart-search field as Spotlight is. In addition, you'll have the option to choose DuckDuckGo (duckduckgo.com) as the default search engine. (DuckDuckGo offers more privacy than many search engines.)

Apple claims that this new version of Safari is more responsive thanks to JavaScript engine optimization, and that it is more energy

efficient. It will support HTML5 Premium Video—a digital rights management system that allows protected-video playback in Web browsers. (For example, Netflix movies will play without requiring third-party plug-ins.) Safari will also support WebGL, a JavaScript API for rendering 3D graphics in a browser.

Yosemite's Safari additionally offers an advanced Private Browsing mode (in which Safari doesn't track or save your browsing actions). With today's Safari, Private Browsing applies to all open Safari windows. With the next version of Safari, you'll be able to create a window and devote it—and all the tabs within it—to private browsing. The color of the browser window will change to help you identify private windows. And you'll be able to maintain separate windows that aren't configured to be private.

Has Apple removed the Reader feature in Safari?

No! The company has only simplified Reader and Reading List. The Reader icon now appears as a series of horizontal lines to the left of the search field. Just hover over the field, and, to the right of the Reader icon, you will see a plus button; click it to send the webpage to your Reading List.

Any changes to the Safari sidebar that Apple added in Mavericks?

Nothing major: The sidebar still shows Shared Links (links from people you follow on social networks), Reading List items, and bookmarks. A big upgrade is the ability to subscribe to individual websites—this is actually the return of RSS feeds to Safari. On many sites, if you click the Share button (at the upper right of a Safari window), you'll see a new "Subscribe in Shared Links" option. This basically adds the contents of that site's RSS feed to your Shared Links list.

What's new in Mail?

The two major new features are Markup and Mail Drop. If you've ever annotated images in Preview, you'll understand how Markup works: When you add an image to an email, you'll be able to use annotation tools to mark it up. The tools are remarkably similar to those in Preview—you can add shapes, arrows, and text, and fill out and sign PDF documents by drawing in your signature or using one you've captured with a webcam.

Mail Drop is a method for sending huge attachments



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(which can't make it through some email gateways). The service is confined to the Mail app. If an attachment is too big, it will be uploaded to your iCloud account. If the recipient also uses Mail under Yosemite, they'll see the attachment. If not, they'll see a link to the attachment, which they'll click to download. Attachments sent via Mail Drop still can't exceed 5GB per message, though.

What's new in Messages?

Messages in OS X is getting some cool tricks. The tap-to-talk feature will let you send quick voice memos. Like messages in apps such as Snapchat, those snippets will be temporary and will disappear within minutes of being played unless you save them. You'll also be able to send multiple images or a quick video.

Group texting also gets an overhaul. You'll be able to name group conversations (for easier reference), add and subtract users to the conversation on the fly, and leave the conversation (or click the Do Not Disturb button) if you're getting flooded with texts. Messages also makes browsing images and video in a thread much simpler; tapping the Details button lets you see any attachments you've saved in that conversation over time. And, as we mentioned above,

you'll be able to view SMS messages from your pals if you also have an iPhone.

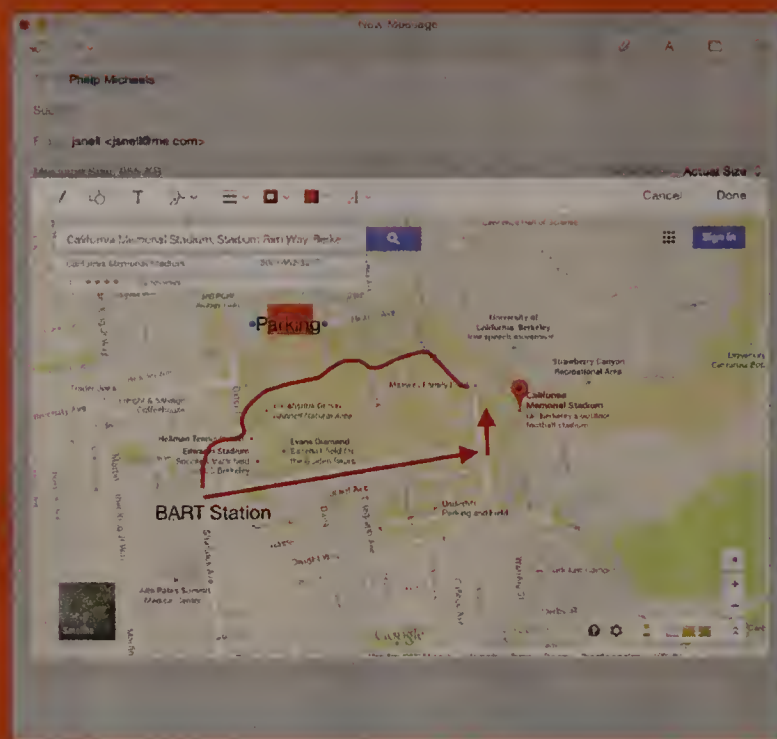
Apple didn't mention Game Center. Is the green felt still around?

A moment of silence for green felt: Game Center on OS X now uses the same colorful bubbles that first appeared in iOS 7. It also has the same categories as its iOS counterpart, including challenges and turns.

We didn't hear anything about iTunes, but I noticed that there was a new icon in the dock.

iTunes does indeed have a new icon in Apple's promotional materials. Stay tuned: If

MAIL'S MARKUP LETS YOU ANNOTATE IMAGES IN EMAIL ATTACHMENTS.



anything again, but fortunately Apple is adding a smart-search feature and a Favorites button. The search field will initially prompt you with a collection of nearby photos, images taken at the same time last year (for the nostalgia factor), and all-time favorites; but you'll also be able to search by date, time, location, or album name.

The Photos app has new image-editing features, too: Download an image to your device, and you'll be able to use a bevy of iPhoto-inspired features to crop, straighten, remove red-eye, adjust lighting and contrast, and more. All of those

Apple follows its usual pattern, we may hear more about the company's music offerings in the fall.

What about Photos on the Mac?

OS X Yosemite won't ship with a Mac version of the Photos app, but Apple did preview an early version of the program that should show up in 2015. It features many of the same improvements and user interface changes found in the iOS 8 version of Photos, and it sounds like it will use the iCloud storage locker to upload full-resolution copies of your images and video.

Having all those images at hand might make you a bit nervous about ever finding

edits sync across your devices, so the corrected image will appear in your library immediately. The edits are nondestructive: If you decide that you prefer the image unfiltered after all, you'll be able to revert it.

On top of that, OS X's Extensions for developers enables the makers of third-party apps to provide filters and adjustments that you could use from within the Photos app.

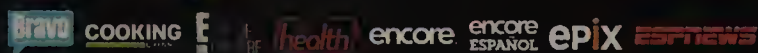
What does Extensions mean for iPhoto? Good question. For many users, the feature might replace iPhoto entirely. It remains to be seen if Apple will reposition or refocus iPhoto for a different audience, or if iPhoto will soon join Dashboard on the list of Mac technologies whose days are numbered.



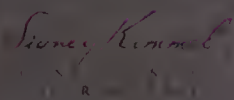
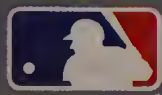
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iOS 8 FAQ:

WHAT WE KNOW SO FAR ABOUT APPLE'S NEXT-GENERATION MOBILE OS



UNDER THE SURFACE iOS 8 brings big changes in features and offers a more powerful mobile experience.

➔ Given iOS 7's visual overhaul last year, it wouldn't have been surprising if Apple decided to just focus on small under-the-hood improvements in iOS 8. But iOS 8 looks like it will be every bit the game-changer its predecessor was.

This time, the focus is on system features and app improvements more than on visual tweaks. In particular, the update will see a seismic shift in the way apps communicate with each other, giving mobile users a richer experience. Here are the details so far.

THE BASICS

When is iOS 8 due out?

Apple says "this fall." If the pattern of recent years holds, the company will have a press event in the fall announcing new iPhone and iPad models,

and iOS 8 will come out only a few days before those new devices hit the market. If we were to venture a guess, we'd say mid-September—that would give Apple time to get its new mobile devices in stores before the holiday shopping season begins in earnest. But again, that's just an educated guess.

What devices will iOS 8 run on?

Essentially every iOS device dating from the iPhone 4s, the iPad 2 (and its technological twin, the iPad mini without a Retina display), and the fifth-generation iPod touch.

So what's new in iOS 8?

The mobile OS will have new photo features, big changes in Messages, predictive typing, the first major update to the iOS keyboard, iCloud and iTunes improvements, support for health apps and home automation, an improved version of Spotlight, and much more. And then there are Apple's Continuity features, which will mate Macs and iOS devices in a slew of interesting ways.

SYSTEM SERVICES

Can you explain how Continuity works?

Continuity is a group of features that will sync your

data across multiple devices with little to no effort on your part. That will include things like seamlessly transferring files between Macs and iOS devices via AirDrop; accessing files on iCloud Drive from any device; using your Mac to answer incoming phone calls to your iPhone; sending SMS messages from an iPad or Mac; starting an email on one device and finishing it on another; and more. Apple previewed Continuity's feature set using its own built-in applications, but apparently third-party apps will be able to build in support for the feature, too.

iCloud Drive? Does iOS finally get a file system?

It does. But first, a bit about iCloud Drive. Another feature that will span multiple devices, iCloud Drive is a central storage locker for files and projects you produce using various apps on both iOS and OS X. You can find out more about it in our iCloud FAQ (go.macworld.com/icloudfaq).

So, yes, iOS 8 will have access to files, and not just from within the apps that created them. The Document Picker, as Apple calls the new interface, looks like a traditional Mac-style Open dialog box. While files, by default, will be grouped according to the application that created them, Apple says you'll be able to create your own folders and organize your documents any way you see fit. In OS X and Windows (yep, we said Windows), you'll be able to simply drag files into the iCloud folder to sync them between your devices à la Dropbox.

What's QuickType?

The iPhone has always had Autocorrect. But now the feature is getting a welcome retooling. QuickType, the successor, adds a word selector atop your iOS keyboard for faster input.

When you type something in iOS 8, QuickType will attempt to predict the words you want to use next, offering suggestions that are defined not just by the letters you're typing but also by the conversational context. For instance,

the service will recognize the difference between a more casual tone in Messages and the more formal tone of a message in Mail. It will also make different suggestions depending on who you're communicating with, based on your past conversations. QuickType will learn your habits the more you type, but it will keep that data confidential and stored locally on your device, so you won't have to worry about your keystrokes being accidentally (or maliciously) revealed to the world.

I heard that interactive notifications made the move to iOS. True?

Yes! OS X Mavericks brought the notion of Quick Reply and interactive buttons to notifications on the desktop. Now iOS 8 brings those features to the mobile realm. You'll be able to pull down banner alerts to quickly reply to texts or email, accept calendar notifications, or snooze reminders—without having to open the requisite app. This function should even work with third-party apps if they enable it.

What's that row of people I saw in the demo of the new multitasking screen?

When you double-press the Home button (or use a gesture on the iPad) to open the multitasking interface, a new row of icons will appear atop your recently used apps. The icons are avatars of people you've recently communicated with. If you scroll to the right, you'll see your Favorites list. From there, if you tap a photo, you'll get quick access to buttons that let you call, text, or use FaceTime to video-chat with that person.

What's this about a new and improved Spotlight?

Though OS X Yosemite is receiving the biggest improvements to search tools, iOS 8 is getting its fair share, too. Now, when you search in Spotlight, you'll be able to access Wikipedia information; news; Maps data for nearby places; results from Apple's iTunes, iBooks, and App stores; suggested



websites for your query; and movie showtimes—all in addition to the contacts, email, messages, apps, and music that already appear in search results. The same engine will be built into the new Safari's toolbar.

Is Siri getting any improvements?

Apple's virtual assistant got only a short nod in the keynote, but a few cool enhancements are coming its way in iOS 8. For one thing, Siri promises to become even more responsive. You'll be able to grab Siri's attention without even pressing the Home button: Just yell, "Hey, Siri," followed by your command, and the phone will spring into action. If you're thinking this will eat up battery life, don't worry: The device needs to be plugged in for this to work.

Even if your device isn't charging, though, you'll still be able to access some of Siri's other tricks. It will now recognize words as you say them, rather than waiting until you've completed your sentence; and you'll be able to use Shazam technology to have Siri listen to and identify music (and buy that song from iTunes if you're so inclined).

Is AirPlay any better?

Those who use their Apple TV box as a presentation device (or as a good way to share slideshows at a friend's house) will be excited about iOS 8's peer-to-peer AirPlay discovery/playback service. It will let you stream video and mirror your device's display to an Apple TV without

connecting to a Wi-Fi network. It's a neat way to share projects, photos, or video without having to fuss with network passwords.

What's Family Sharing? Is it a multiuser feature?

Family Sharing—due to debut with OS X Yosemite—should bring a measure of sanity to households full of Apple devices. The idea is simple: If multiple people reside in your home, you likely have just as many Macs, iPhones, iPads, and iPod touches. Each member of the clan will be able to join the Family

Sharing group (up to six people are allowed), which will be associated with a single credit card. That done, any member of this group will be able to download almost any media bought by any other member of the group without sharing Apple IDs or passwords. (Apple has indicated that not all media will be eligible for sharing.)

Family Sharing will also let families share photo albums, calendars, and even the locations of family members and their devices.

Alas, Family Sharing won't supply user accounts or profiles. But even though

Family Sharing won't help us better share a single device among family members, at least we won't have to buy multiple copies of an app or tune—or all share one "Purchasing Apple Stuff" account.

BUILT-IN APPS

I hear there are new Photos features. True?

Yes! It's almost as if the folks at Apple saw our Photos wish list. The Photos app is getting an overhaul that combines iPhoto for iOS's editing tools with a fully functioning cloud-storage locker for your images.

For starters, any photo you take and store in the Photos app will be automatically uploaded to your iCloud Drive, where your images and video are stored at full resolution and in their original formats (JPG, PNG, Raw, you name it). All of those images will be viewable on any iOS device or on the Web. Starting in early 2015, you'll be able to upload and view photos from your Mac, too. And the storage is going to be dirt cheap: You will get 5GB for free as part of your iCloud account, and you can buy an extra 20GB of storage space for just \$1 a month, or 200GB for \$4 a month.

Because all your photos will be uploaded to your iCloud photo library, they'll accumulate quickly. To make it easy for you to locate an image, Apple is including a smart-search feature. The search field will offer you choices of photos taken nearby, photos you took at the same time last year, and ones you've marked as favorites. In addition, you can search for images by date,



time, location, or album name.

The Photos app also packs a slew of new editing features similar to those in iPhoto. Among the options are tools for cropping, straightening, removing red-eye, and adjusting lighting and contrast. Your edits will be uploaded immediately to iCloud and will sync across all your devices. If you decide, however, that you don't like the changes you made, you can always revert to the original version of the image.

iOS 8 also gives developers tools, called Action extensions, that could allow the creators of popular third-party apps to provide features such as filters and adjustments directly within the Photos app itself.

What about the Camera app?

The Camera app is getting improvements too. Focus and exposure are now separate controls, and third-party developers will have full access to those settings. In addition, two time-based features make their debut in Camera: a self-timer and a time-lapse video function. The latter automatically creates a time-lapse video from a video you've recorded, while the self-timer gives you more flexibility when you take selfies with your device's rear camera.

What's new in Safari and Mail?

Glad you asked. Let's start with Mail. It's getting some more gestures: You'll be able to swipe left or right on a message in your inbox to mark it read or unread, flag it

for follow-up, or swipe it all the way off the screen to delete it. While you can already mark contacts as VIPs (a feature added in iOS 6), Mail in iOS 8 will let you slap a VIP label on individual message threads. (Shouldn't that be VIT?) This way, you'll always stay on top of new replies to that thread, no matter who they come from. Exchange users will be able to set their out-of-office auto-replies from within the Mail app in iOS 8, too.

Mail in iOS 8 will also get some new contextual power. While composing a message, you'll be able to swipe down to minimize it and gain access to the other messages in your inbox in case you need to copy and paste something into your new

email. And if you type something into an email that should go on your calendar, such as a dinner reservation, Mail will toss up a notification that you can tap to add to your calendar.

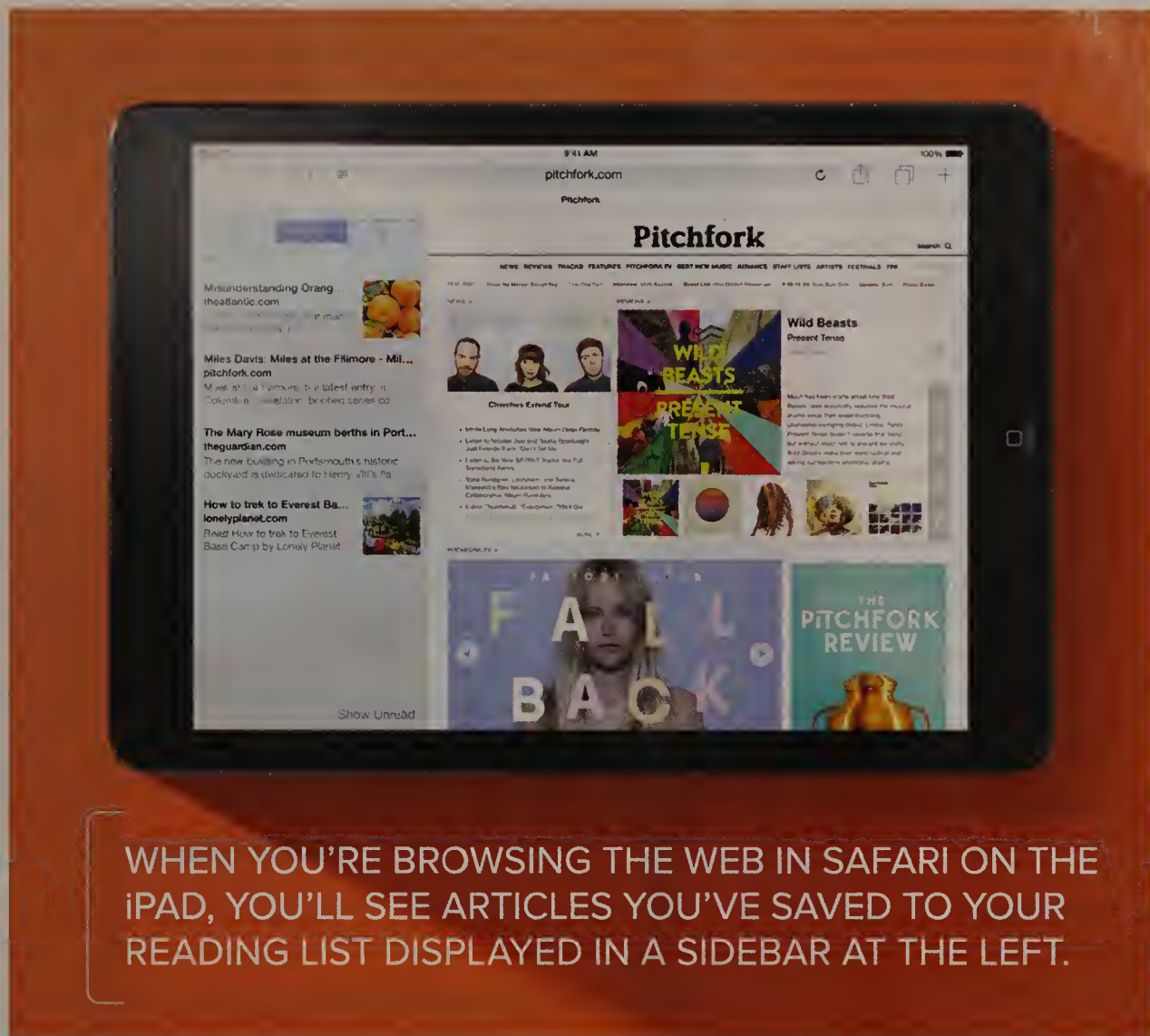
Safari on the iPad will get a cool new Tab view that shows all the tabs you have open, and groups tabs from the same site into stacks. When you're browsing, a sidebar will pop out on the left for your Reading List, bookmarks, and Shared Links (which work like RSS subscriptions), to further align Safari on the iPad and the Mac.

What's new with the Messages app?

A couple of exciting features are coming to Messages in

iOS 8. One is the app's new tap-to-talk feature, which will allow you to send quick sounds and voice memos to family members and friends. Like messages in apps such as Snapchat, those snippets will be temporary, disappearing within a few minutes of being played unless you opt to save them. You'll also be able to send a brief video or multiple images to your contact (or contacts) of choice.

Speaking of multiple contacts, group texting in Messages is getting a huge overhaul. You'll be able to name your group conversation, easily add and subtract users to the conversation on the fly, and depart the conversation (or tap the Do Not Disturb button) if you're getting overloaded with



WHEN YOU'RE BROWSING THE WEB IN SAFARI ON THE IPAD, YOU'LL SEE ARTICLES YOU'VE SAVED TO YOUR READING LIST DISPLAYED IN A SIDEBAR AT THE LEFT.

texts. In addition, you'll be able to share your location with a specific group inside Messages, giving them permission to find where you are for an hour, a day, or indefinitely.

Messages will also make browsing images and video in a thread easier; tapping the Details button will let you see any attachments you've saved in that conversation over time.

iPad users who also have iPhones will get one bonus feature: the ability to see and respond to SMS messages from non-iOS users.

APPS FROM OTHER VENDORS

Are my apps going to be more powerful in iOS 8?

You bet. In the past, apps were apps—when you saw them, you were in them. In iOS 8, apps will be able to manifest visually in new ways: as widgets and by being projected into other apps.

What are widgets?

Widgets are miniature versions of apps that will run within Notification Center's Today view. When you install an app that contains a widget, Notification Center will let you add it to the Today pane. These are very simple interfaces through which apps can provide

at-a-glance information—the latest baseball scores, for example—within the Notification Center window. Apps will also be able to provide links within the widget to launch the full app.

extend functionality—for instance, sharing content to a Web service, transforming data, photo editing, changing webpages in Safari, and hooking up with Internet storage providers.

platform directly to one device. Instead, iOS 8 will connect health-related devices and apps from different makers.

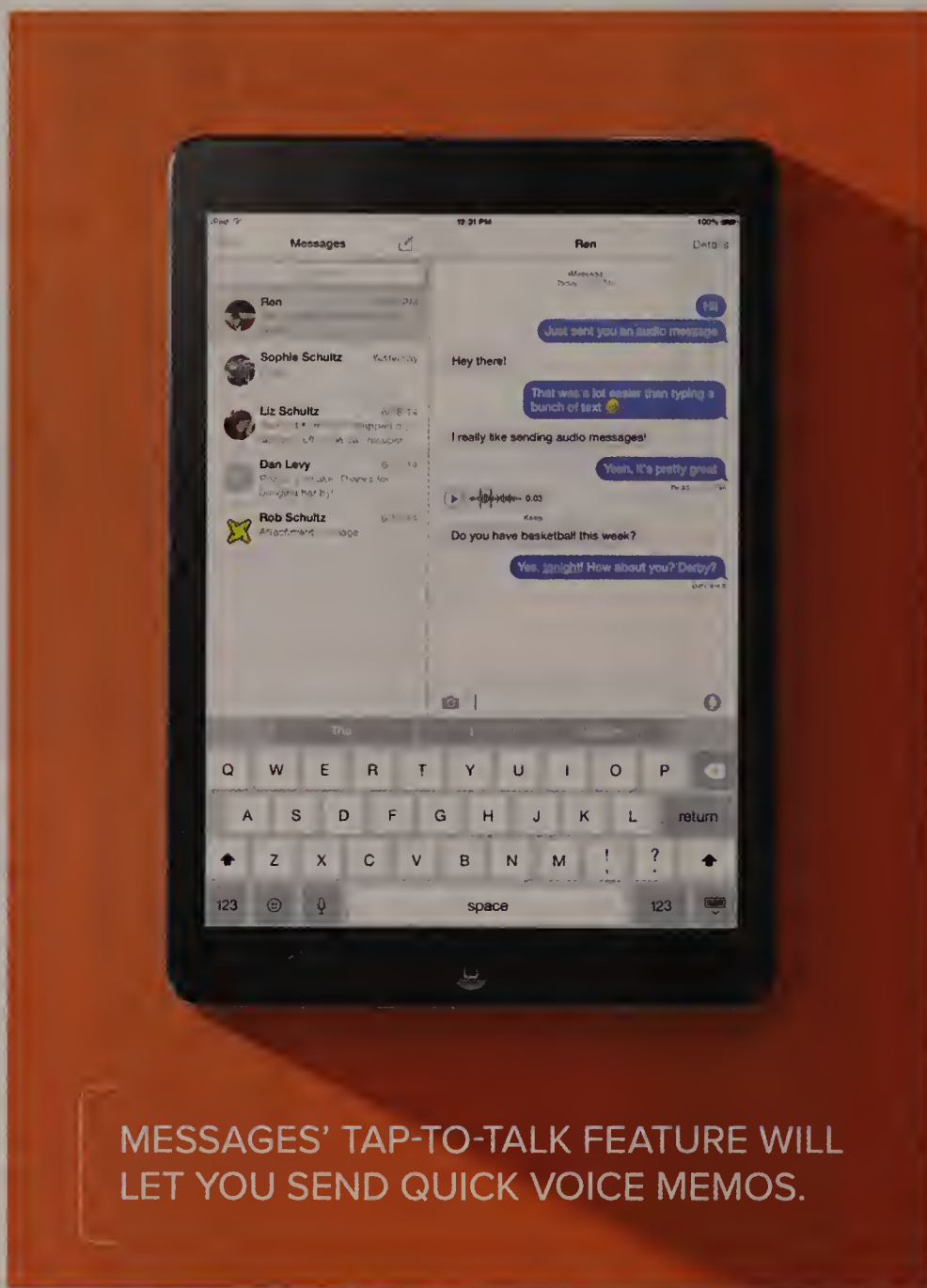
The upcoming OS will feature its own new app, Health, which is powered by

HealthKit, a set of developer tools that enables health and fitness apps to report your personal health information into a shared database. Connected medical devices will be able to pour data into the HealthKit database, as will apps. The Health app will give you a comprehensive picture of your health, with a customizable dashboard that shows you the metrics you care about most.

If Apple releases its own health-related device in the future, presumably it will take full advantage of HealthKit. But users can integrate data from whatever wearables and apps they're currently using. This way, Apple doesn't have to pick a one-size-fits-all winner in a fragmented market.

Apple announced partnerships with Nike, as well as with the

Mayo Clinic and Epic Systems, a software provider for a host of major hospitals and healthcare organizations. The Mayo Clinic, for example, is developing an app that will let patients' doctors keep an eye on metrics such as blood pressure and reach out to the patient if they see something that causes concern.



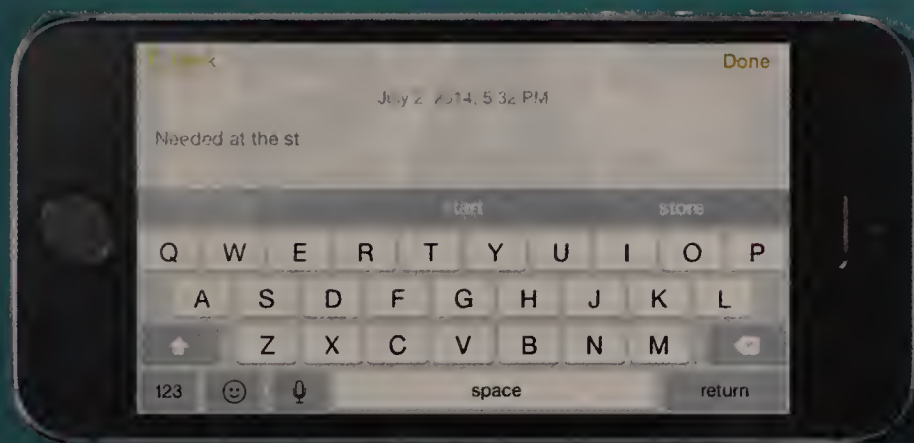
MESSAGES' TAP-TO-TALK FEATURE WILL LET YOU SEND QUICK VOICE MEMOS.

What do you mean apps can project themselves into other apps?

You know how when you use the Photos app to email a picture, a Mail window appears? App projection is sort of like that. In iOS 8, apps will have the ability to launch small, short-lived services that

I hear Apple is interested in health and fitness apps. Does iOS 8 have anything like that?

Rumors about Apple entering the crowded yet underwhelming wearables market had been swirling. But the keynote announcements revealed that Apple isn't tying its mobile



IOS'S QUICKTYPE FEATURE OFFERS CONTEXTUALLY RELEVANT SUGGESTIONS AS YOU TYPE.

And what about home automation?

Like HealthKit, Apple's HomeKit isn't a physical gadget. It isn't even an app—not yet, anyway. Rather, HomeKit is a collection of APIs that will enable third-party makers of connected-home products to integrate devices such as smart door locks, thermostats, lights, and appliances more deeply into iOS 8. That, in turn, could allow you to coordinate multiple devices from different companies and to trigger actions via Siri. For example, telling Siri you're off to bed could prompt a series of automated actions that would check that your doors are locked, cut the lights, and turn down the heat.

Apple is working with partners like August, Haier, Honeywell, Netatmo, Philips, Withings, and many others to develop a secure communications protocol that will let your iPhone talk to a wide

range of devices without forcing you to use separate single-task apps to control each gadget individually.

Android is able to install third-party keyboards. Does iOS 8 finally add support for this?

It certainly does. In addition to upgrading the existing Apple keyboard with QuickType, Apple has opened up the keyboard for third-party alternatives. This change allows companies that want to support different languages and alternative input methods to move their keyboards to iOS. For example, Swype (which uses a system where you type by sliding your finger across the keys) appeared on a sample slide during the WWDC keynote.

Some keyboards send your data across the Internet to make autocorrect suggestions, which is scary if you don't want your keystrokes to be logged by other compa-

nies' servers. Apple will let third-party keyboards send your data, but only if you agree; so if you don't like the idea of sharing what you type with others, you can say no.

What if I don't want a bunch of apps getting in my way or causing security problems?

As with most things in iOS, you'll be able to turn apps off in Settings. Apple says these new app options will be sandboxed and are designed to be very secure, but the control will be in your hands. If you want to tell an app to go away, you'll be able to do so in the Settings app.

Can other apps now use iOS's Touch ID?

Yes! In iOS 7, the touch sensor on the iPhone 5s could serve solely to unlock the phone and approve purchases. But in iOS 8, apps can be updated to unlock themselves when

the Touch ID sensor verifies a person's identity. The apps won't obtain any access to your fingerprint data; that remains held in the "secure enclave" area of the iPhone's processor. But they will get a thumbs-up message—so to speak—when the device has verified your fingerprint.

What's new for enterprise users?

Apple spent a considerable amount of time during the keynote detailing enterprise improvements—unsurprising given the iPhone's increased presence in the workplace. (See *Working Mac* on page 74 for more on this topic.)

First, all apps with sensitive data will be protected with a passcode until you unlock the device following a reboot. In addition, if you're an enterprise user of Mail, you'll enjoy several new features: You'll be able to sign and encrypt individual messages, send Exchange auto-reply messages, and distinguish email messages sent from external domains by color. In the Calendar app, you'll be able to view colleagues' free and busy times when scheduling meetings, mark events as private, create better custom repeating events, and email meeting attendees.

If your enterprise devices are centrally managed, iOS 8 will give your IT staff more-advanced remote device management functions. It will also make it easier for them to manage user data, to filter the apps that can open documents from iCloud Drive, and to send books, eBooks, and PDFs to devices automatically. ■

Macworld PODCASTS

*Chris and Serenity discuss the **latest goings-on** in the Apple world.*

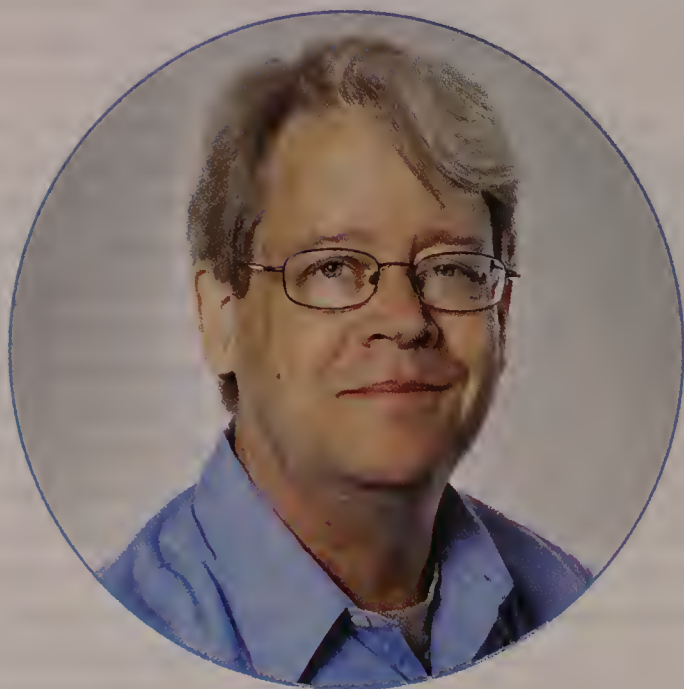
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ORGANIZE YOUR iTUNES LIBRARY

**THE KEY
TO KEEPING
YOUR LIBRARY
IN ORDER:
GOOD TAGS.**

Music has a way of making people a bit compulsive. If you're going to spend time sorting your songs, at least do it efficiently. We asked Kirk McElhearn for advice on tagging tracks—the key to iTunes organization. Follow his tips, and maybe you'll have time to actually enjoy all that music.

BY KIRK McELHEARN

ILLUSTRATIONS BY MICHAEL SLACK

ENTERING DETAILS

THE RIGHT WAY TO TAG EVERYTHING

Imagine what your iTunes library would be like if all your songs had random characters for their song, artist, and album names. You would never find what you want to listen to. But even if your library's tags are mostly correct, any erroneous tags—a misspelled artist name, for instance, or a song title with a typo—may prevent you from locating the files you're seeking. And if you've left some tags blank, some of your tracks or videos won't display in certain views.

For all these reasons it's a good idea to take a close look at your iTunes library and ensure that your files' tags are filled in and correct. To do that for an individual item, simply select a track or video and press ⌘-I to bring up the item's information window. The Info tab within this window contains many of the item's tags, but the other tabs provide additional tag fields—the Show and Episode Number tag fields under the Video tab, for example. If you want to apply the same tag to

multiple files, select all those files and press ⌘-I to produce the Multiple Item Information window, which is largely similar to the single-item version.

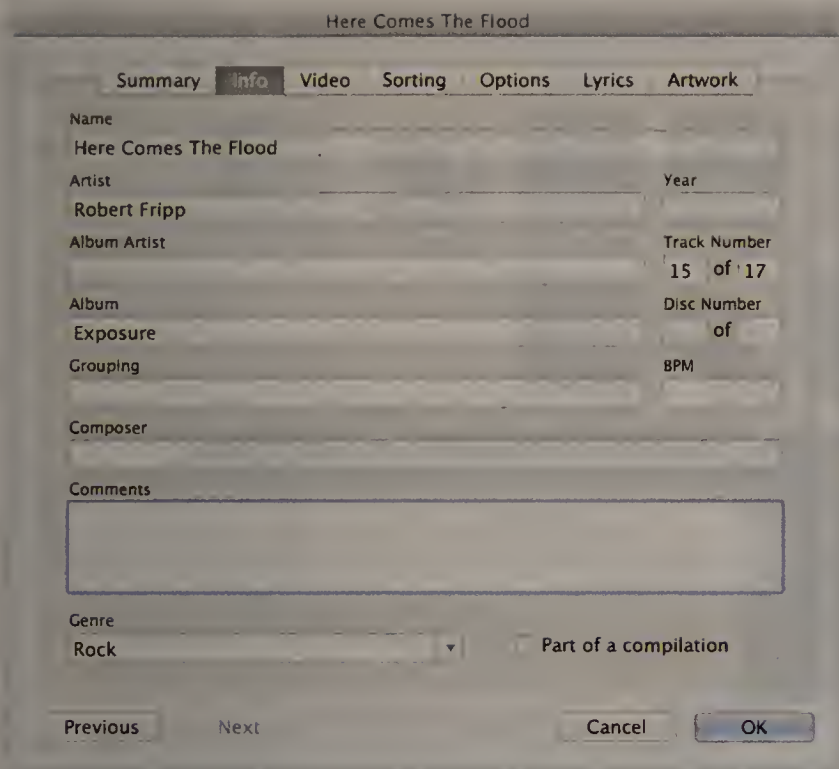
TAGGING STRATEGIES

You need not enter metadata in every available tag field, but some tags will help you manage your music and find what you want to play. Here's a bit of advice regarding the appropriate tags to use on different kinds of music.

Pop, rock, hip-hop, dance music: If you're a casual

listener of popular tunes, you don't need to worry much about the more esoteric tags. Sticking to the basic items should suffice. You need to fill in the Name tag for all songs, but also the Artist tag and maybe the Album tag. You might want to take advantage of the Album Artist tag as well: Many popular songs have "featured" artists—a Beyoncé song with Jay Z, for example. Such a song should have the Album Artist tag set to *Beyoncé* so that it stays grouped with her latest





ONE AT A TIME To edit tags for a single track, select it and press ⌘-I. The tabs in this window let you change different tags and settings. Most of them are in the Info tab.

album (assuming that you've purchased the entire album). But you could make the Artist tag either *Beyoncé & Jay Z* or *Beyoncé (feat. Jay Z)* so that you can easily find that duo's music later on.

You may wish to fill in the Genre tag if you search for music by genre. (See page 72 for more about the Genre field.) If you like to sing along, go ahead and insert lyrics in the Lyrics tab. And if you're

You need not enter metadata in every available tag field, but some tags will help you manage your music and find what you want to play.

serious about maintaining your classic-rock collection, add the year in which the album was recorded or released so that you can more easily pull up songs from the '60s, '70s, or '80s. (See "Adding Dates to Your Music" below for further discussion of the Year field.)

Jazz, show tunes, soundtracks: For these musical varieties, in addition to the basic tags above, you may want to enter more granular information. The Album Artist tag is an impor-

tant one for these genres. For a Thelonius Monk Quartet with John Coltrane at Carnegie Hall album, for example, you have a few options. You could set the Artist to *Thelonius Monk* or to *Thelonius Monk and John Coltrane*. And you could assign the Album Artist field to either *Thelonius Monk*, *The Thelonius Monk Quartet*, or *Thelonius Monk and John Coltrane*. Or you could leave the Album Artist blank. It all depends on how you classify such an album: Is it a Monk

QUICK TAGGING TIPS

ADDING DATES TO YOUR MUSIC

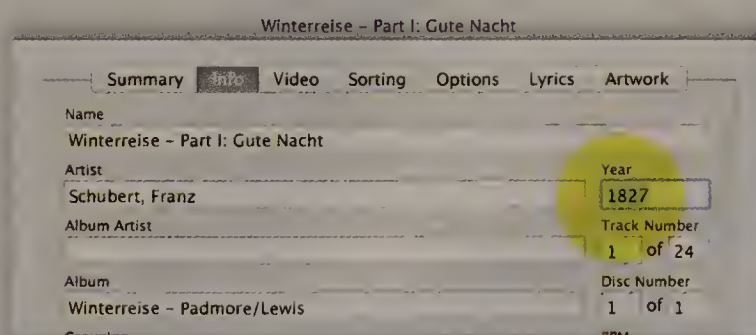
Q: How do I add the composition year to each song in my iTunes library? I have songs dating back to the 1600s, and I want to listen to a brief history of music.

A: I'm afraid you'll have to do the job manually. The Year tag lets you add a year to any track. You could insert the year a piece of music was written, as you want, but you could instead enter the year the track was recorded, when it was released, or even when it was rereleased for a new, remastered version of an album.

Just select a track, press ⌘-I, enter a year in the Year field, and click OK. If you prefer, you can enter the information on multiple tracks by selecting the songs,

pressing ⌘-I, entering the year, and clicking OK.

The real difficulty is determining what years to enter in this field, as it will require a fair amount of research. (Don't use iTunes' Get Track Names feature; it will replace all of your tags for the selected tracks, and you probably don't want that.) I can recommend a few places to search for the information. AllMusic (allmusic.com) has a huge database and offers detailed credits for many albums, including the names of



A VERY GOOD YEAR You can fill this field with the year a piece was written, when it was recorded, when it was released, or whatever you find most useful.

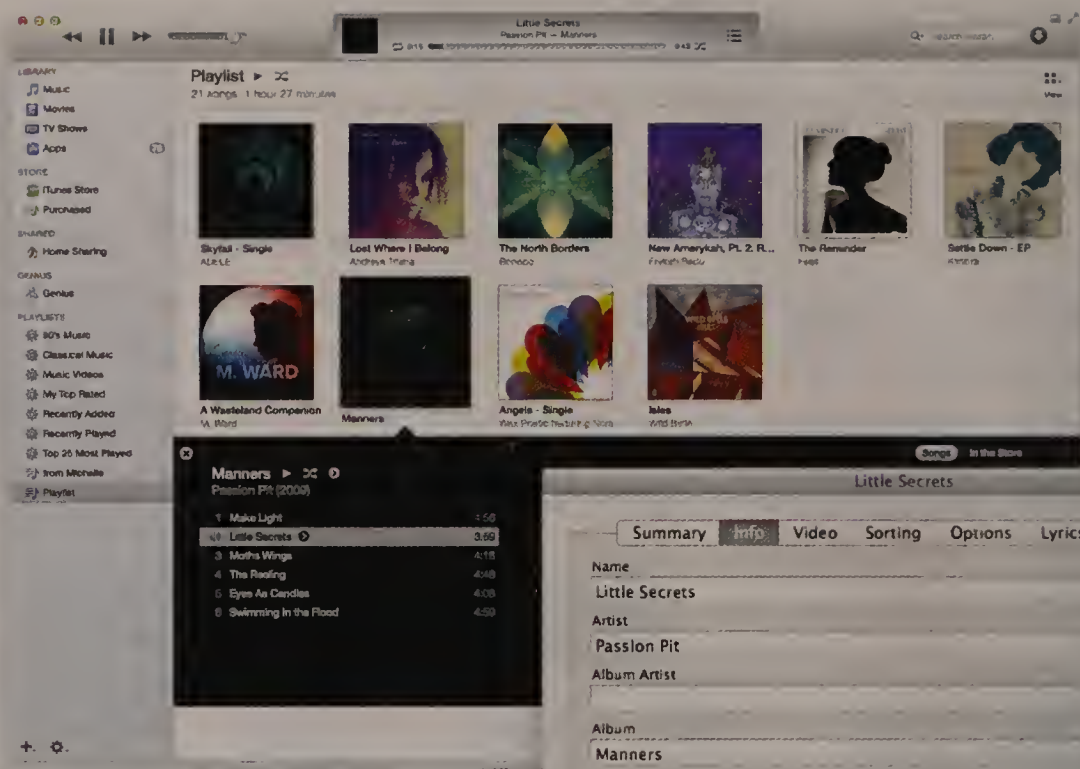
producers, engineers, and so on. Discogs (discogs.com) lists several million albums, with release dates and additional information. It's community sourced, and you will find a lot of indie albums there. Finally, for classical music, I use Wikipedia (wikipedia.org), which provides extensive information about classical composers and works.

album with Coltrane joining in, or is it a Monk and Coltrane album?

The Composer tag can be important for this type of music, too. When using this tag, decide whether to list composers by their surname first—should it be *Thelonius Monk* or *Monk, Thelonius* in this field? Use the style that is more natural for you (and therefore easier to remember later on).

For these kinds of music, you may also want to add the year of the track, inserting either the year the music was recorded or the year the item was released. (This tag is especially useful for creating smart playlists by year.) For the Monk and Coltrane at Carnegie Hall album I mentioned earlier, for example, I would set the year to 1957, when the concert was recorded, even though the album wasn't released until 2005.

For songs with vocals, why not add lyrics? And if you're a detail-oriented music fan, use



IN-DEPTH DESCRIPTION

Feel free to use the Comments field to add lyrics, notes, or other tidbits about a song.

the Comments field to enter other tidbits such as precise recording dates, record labels, musicians, and producers.

Classical music: For the classical items in your library, you'll want to use all of the tags noted above, particularly the Composer tag. Think about how you enter genres, as well: You can stick with the one-size-fits-all *Classical*

genre or use custom genres such as *Chamber Music*, *Keyboard*, or *Opera*. Just type any text you desire in the Genre field, and iTunes will save it as a genre listing.

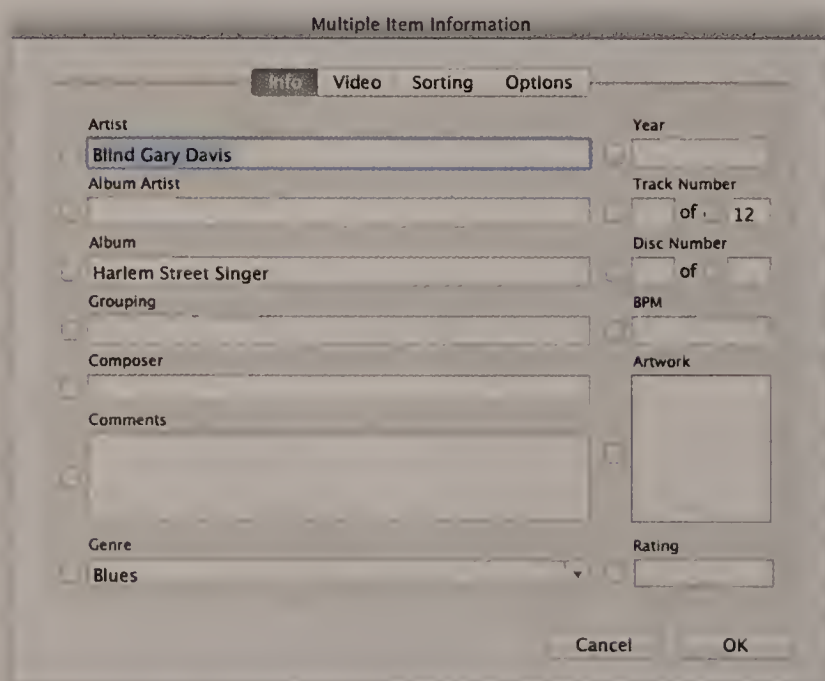
And don't forget about the Grouping tag, which collects tracks under a work's name. For instance, you can select all the tracks of a specific recording of Sibelius's String Quartet in D Minor and name them in the Grouping tag. Use the tag similarly to how you would for an album. For instance, I might tag that work *String Quartet in D Minor – Emerson Quartet*. Although you can't view music by the grouping, you can use the Grouping tag in smart playlists.

Movies and TV shows: iTunes includes tags specifi-

cally appropriate for video files under the Video tab of the Info window.

For TV shows, you can insert the name of the series, the season number, and the episode number. Doing so will make navigating through multiseason series with an Apple TV much easier.

Movies don't need the same kind of information in their tags, of course, but if you wish, you can add details about a film in the Video tab's Description field. Unfortunately, iTunes offers neither a Director tag nor an Actor tag for movies, but you can put either of those names in the Artist field; if you want to note several cast members for a film, you can place their names in the Comments field within the Info tab.



ALL TOGETHER NOW To edit tags for all the tracks of an album, select those tracks, and then press \mathbb{A} -I. Again, most of the tags I discuss in this article are on the Info tab.

You might know **Joshua**.

He loves video games, and he owns enough to know they're not all meant for kids. That's why he reminds his friends (at least the ones that have kids) that they all have **big black letters on the box** to help parents find the ones that are best for their families.

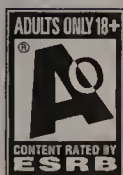
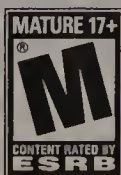
You can learn about those ratings at **ESRB.org**

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ENTERTAINMENT SOFTWARE
RATING BOARD



CORRECTING ERRORS

HOW (AND WHY) YOU SHOULD CLEAN UP YOUR iTUNES TAGS

Now that you've tagged the media in your iTunes library, I want to show you how to clean up tags you previously applied. What defines a "dirty" tag? Song names may have random characters, perhaps. Or maybe words are misspelled or incorrectly capitalized, or tracks are attributed to the wrong artist. Such errors can make it harder to organize your library and find the media you want. The following tips and tricks will help you sweep out the cobwebs.

Depending on where you get music (no, I'm not judging you), you may have some tracks with excellent tags. Other tracks might have incomplete information. I've downloaded music with title tags of *Track 1*, *Track 2*, and so on. I've ripped CDs and discovered that the best available information from Gracenote (the online database iTunes uses to fill in tags) is insufficient. I've gotten music tagged with extra words, names, and much more.

I'm slightly tag-obsessive, but only because I want to be able to find my music, and because I use smart playlists that depend on accurate tags. Here are some of the ways I correct problems.

WHEN YOUR TAGS ARE A DISASTER

Let's start with a worst-case scenario: You have songs whose tags are gibberish. You know what the music is, but you don't want to spend





Using 'acoustic fingerprinting,' TuneUp and SongGenie 2 did a good job of figuring out my music, and they applied tags.

MYSTERY SOLVED SongGenie 2 and similar utilities can identify unknown song files and correct missing or erroneous tags.

time playing each track and entering the tags manually. A couple of apps can step in.

I set up a test with the help of Doug Adams, purveyor of Doug's AppleScripts for iTunes (dougscripits.com). He made a custom script that replaced the Name, Artist, Album, Genre, and Year tags with random characters. (For the Year tag, the script used a

random year.) I took 500 tracks, some of which were popular and others less known, and ran them through Doug's Tag Munger script. The mess this script created was amazing.

I then processed these tracks with two apps that claim to clean up tags. The first was TuneUp Media's TuneUp (\$40 per year or \$50 lifetime subscription; go.macworld.com).

The second was Equinux's SongGenie 2 (\$30; go.macworld.com/songgenie2). Using "acoustic fingerprinting," both apps did a good job of figuring out what the music was, and they applied tags to the files.

TuneUp found all but 14 tracks and made playlists with the tracks it cleaned and the ones it couldn't find. I could then review the 14 remaining

tracks and try to identify them.

SongGenie 2 did almost as well, finding all but 23 tracks. It didn't assemble playlists, but in its window I could see and play the unidentified tracks; from that point I could manually update their tags. SongGenie, however, did worse than TuneUp on album names, getting many incorrect. Both apps suffered from a few glitches, too. For example,

QUICK TAGGING TIPS

WHEN TWO IS TOO MANY

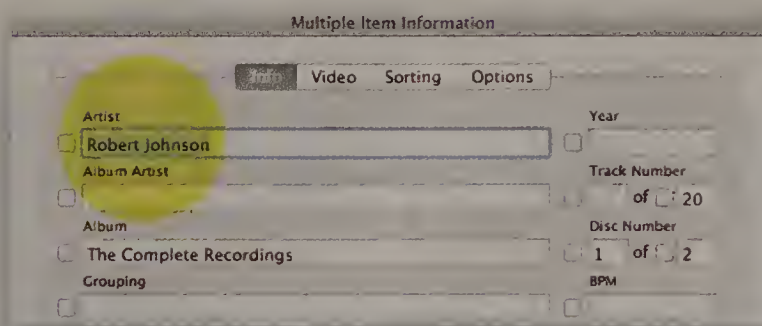
Q: I have a number of artists in my iTunes library that show up twice in Artists view. In some cases, a few songs from one album appear under one occurrence of the artist's name, and the remainder show up under a second occurrence. How can I fix this?

A: If the artist has exactly the same name in both cases, then this problem seems to be a result of tag corruption or unexpected iTunes library behavior.

I corresponded with the reader who sent in this question, and the affected

files looked fine. I saw no trailing spaces after the artist's name, which can cause duplicate entries. The Album Artist tags were okay, too, and the files were all of the same genre.

Here's the solution we found: Select all the tracks by the artist, press ⌘-I to display the Multiple Item Information window, and then change the artist's name to anything—the artist's name with



ELIMINATE DUPLICATE ARTISTS Change the Artist tag and then change it back.

an additional character at the end, say, or something like *The Marx Brothers*. Click OK. Select the tracks again, press ⌘-I, change the name back to the correct one, and click OK. This procedure fixed whatever it was in the tags that was causing the duplication.

QUICK TAGGING TIPS

INSERTING OR EDITING
GENRE TAGS

Q: Many of my songs are either missing their genre or have an incorrect genre assigned. I know I can go in and manually edit them, but I am looking for some assistance. Is there a site that provides genre labels for songs?

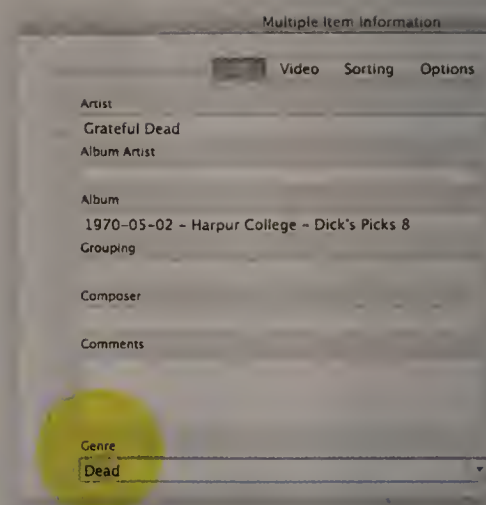
A: TuneUp and SongGenie 2, the two apps I describe on page 71, can clean up assorted tags, including the genre. They're not perfect, but they can help.

Regardless, genres are a personal thing. You may want broad genres (such as rock, jazz, and classical) or more detailed ones (like progressive rock, bebop, and baroque). I've written about the over-genre-fication of music (go.macworld.com/genres), which can confuse listeners who are not in the

know, but if you're certain about the genres you want, then you can use anything in your tags.

My strategy is to use genre tags that help me find my music quickly. So, within my classical music, I use genre tags such as *Keyboard*, *Opera*, and *Orchestral*. I've set up only one *Jazz* genre, and I don't split *Rock* into subgenres. I do have specific genres, however, for certain artists such as Bob Dylan and the Grateful Dead; I have so much music by each of them that it's better they be on their own.

On the other hand, my son, who listens to a lot of electronic music, doesn't bother to add genres to his files' tags. He just chooses his music by the artist. If you don't browse your music by



CUSTOM GENRE Choose a genre from the pop-up menu, or just enter your own, as I did here.

genre, you may not want to take the time to add any genre tags.

iTunes offers a number of genres in its Genre tag menu, but you can enter your own. Just type a new genre for one or more tracks in the Info window and click **OK**, and iTunes will add it.

TuneUp declared that a recording of Bob Dylan's "Forever Young" was 永昼 by 张韶涵, from the apparently popular album 潘朵拉.

Both apps found album art, though much of it was wrong. (Since tracks can come from different albums, that isn't really the apps' fault.) And for many tracks, both apps failed to find the genre or found the wrong one. Even so, such apps are useful for cleaning a library. They can fix a lot, and SongGenie 2 can add lyrics.

TWEAKING TAGS

That was an extreme example, however—you're more likely to want to polish your tags. When I download music or rip CDs, I use AppleScripts (all from Doug Adams) to fix inconsistencies.

Albumize Selection: When songs lack track numbers, first put them in a playlist and drag them into order. Then run the

Tagging music as you rip it or when you add it to your iTunes library will save you time later, when you decide to fix everything at once.

Albumize Selection script (go.macworld.com/albumize), and it will apply track numbers, such as *1 of 10*, *2 of 10*, and so on, so that your albums will play in the correct order.

Artist – Name Corrector: Sometimes tracks have tags in the format *Artist – Song Name*. One Doug Adams script (go.macworld.com/artistname) puts the artist's name in the correct tag and leaves the song name where it should be.

Remove n Characters From Front or Back: I use this script (go.macworld.com/removechar) to fix tags that have extraneous information at the beginning of the name

(composers' names, say), or at the end (such as *[Live]*).

Proper English Title Capitalization: It irks me to see titles such as "Beat It On Down The Line" (it should be "Beat It on Down the Line"), or "Girl From The North Country" (which should be "Girl from the North Country"). This script (go.macworld.com/titlecaps) fixes them.

This Tag That Tag: At times, tag information is in the wrong place—the artist name is in the Album tag and the song name is in the Artist tag, for example. This script (go.macworld.com/thistag) allows you to swap, copy,

append, or prepend data from different tags.

Search-Replace Tag Text:

This script (go.macworld.com/searchtag) performs a basic find-and-replace operation for any text in all the main tags. You can, for instance, replace one specific word with another, or you can delete a certain word or phrase by leaving the Replace With field blank.

I recommend tagging music as you rip it or when you add it to your iTunes library. This will save you time later, when you decide to fix everything at once. It takes only a minute to tag an album, and the above tips and tools can make doing so simpler. Keep your tags clean, and you'll find the items you want a lot more easily. ■

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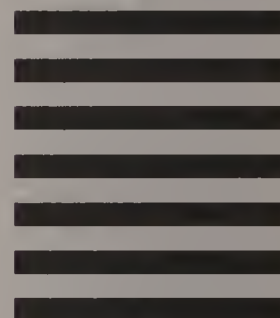
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What iOS 8, OS X Yosemite, and iCloud Drive Will Mean to Businesses

BY RYAN FARR

Apple's WWDC keynote address was an interesting mix of user-oriented and developer-focused announcements. The company introduced a number of advances comprising the consumer, enterprise IT, and developer spheres.

The big question now is what happens when the consumer and enterprise spheres intersect, as they are certain to do in a world where iOS is the dominant mobile operating system in enterprise and where Apple continues to push for integration among its mobile, desktop, and cloud platforms.

HOMEKIT AND HEALTHKIT

In breaking down Apple's standout announcements, let's start with the new

HomeKit and HealthKit. Both platforms rely on a variety of technologies to integrate functionality and highly personal user information.

Although neither of these features has an immediate enterprise impact, they do make an iPhone (or other iOS device) more personal than ever before. In a Bring Your Own Device (BYOD) context, this is guaranteed to make users more concerned about what information an employer or IT professional can see on a managed device. With full access, an employer could even unlock someone's home or access sensitive medical data.

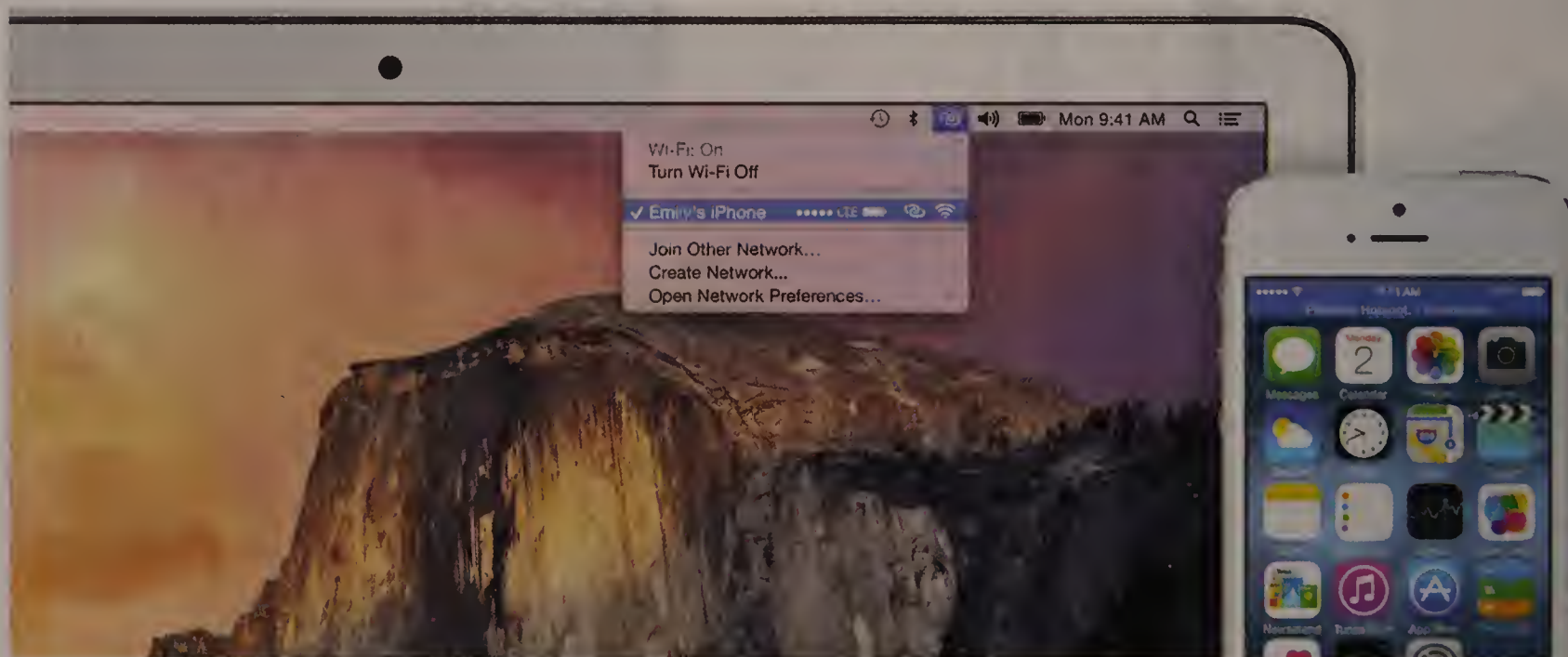
That said, it's almost certain that Apple has designed these features in a way that will prevent IT from being able

to access private employee data.

Even in iOS 7, Apple did a good job of creating a boundary that protects user privacy. The key challenge now is for IT to give that kind of assurance to every BYOD user.

Another issue to contend with is that a complete remote wipe of a device would erase all personal data. That could leave an employee locked out of their own home, as well as prevent the recording and use of critical health details.

Ideally, an employer's policy will be to wipe only corporate data from employees' devices. If, however, the employer requires a full wipe, then IT should inform all users about that policy before managing personally owned devices.



EASY CONNECT Hotspot lets you tether all your Apple devices and share your LTE connection with them.

NEW 'SHADOW IT' TEMPTATIONS

In addition to HomeKit and HealthKit, Apple introduced several other OS X, iOS, and iCloud features that are likely to create or exacerbate what is often called the "Dropbox problem"—in which employees use personal devices and services while working with corporate data because they're much easier to use than the tools IT provides. Here's a rundown of Apple's new offerings.

iCloud Drive and Mail Drop: iCloud Drive is Apple's response to services like Dropbox and Google Drive. It's a big addition to iOS, OS X, and the Web-based iCloud interface. Mail Drop, on the other hand, automatically uploads large email attachments to a user's iCloud account and emails a link to them.

The functionality isn't new—companies such as Dropbox have offered such services for quite some time. But these new features really expand the capabilities of iCloud. And the more Apple integrates iCloud into the iOS and Mac experience, the more automatic it will become for users in a way that third-party apps aren't. That's great for users, but it also creates concerns for enterprise IT, as it encourages data to creep into personal services.

Mail Drop, as both a cloud and an email solution, is particularly concerning, as any large business document or file may

be inadvertently stored in a user's iCloud account without the sender or the recipient even realizing it.

AirDrop between iOS and OS X:

AirDrop is a powerful technology that uses Apple's auto-detection features to perform direct transfers of content between nearby devices without users having to configure settings or be connected to the same Wi-Fi network.

Apple introduced the AirDrop service for iOS last year, and it's a great solution for impromptu sharing of

DIRECT DROP Easily transfer content between your iOS and OS X devices with AirDrop.

information such as contacts, photos, and URLs.

The iOS version, however, didn't live up to the full file-sharing capabilities of the Mac version. But that is likely to change now as the two platforms become much more integrated. Concerns still apply, though, about making sure you're sending information to the correct person and avoiding sharing sensitive content.

Handoff: This cross-device sharing functionality is a natural extension of AirDrop. Apple introduced it in iOS 7 and Mavericks—mostly visibly in the Mac version of Apple's Maps—and is ramping it up in iOS 8 and OS X Yosemite.

Handoff is a massive leap forward in usability for people who have multiple Apple devices: You can start a task on your iPhone on the way to work and pick up where you left off once you get to your office and fire up your MacBook Air.

The concern, however, is that the functionality is largely managed by your Apple ID. That means that in addition to Handoff

working on your office devices, it's almost certain to work on personal devices like your iPhone or the family iMac at home.

Thus it's another core Apple feature that makes it easy to mix personal and work data on your personal and work devices, creating data sprawl, and security and accountability challenges.

Instant Hotspot: This is a road warrior's dream. You can tether your Apple devices together and share your LTE data connection. At first glance, this



feature raises security concerns, as work data could flow through nonwork devices, but such issues could be managed using VPNs. In fact, the use of a VPN would actually increase data security by encouraging users not to use public Wi-Fi networks. The one challenge, however, is that users might exceed data caps and burn through their monthly allotments of data.

iOS app extensions: Apple is finally giving developers mechanisms, known as *extensions*, that allow third-party apps to communicate and share data with other apps. Extensions leverage the sandboxing method that has always been at the heart of iOS's app-design architecture.

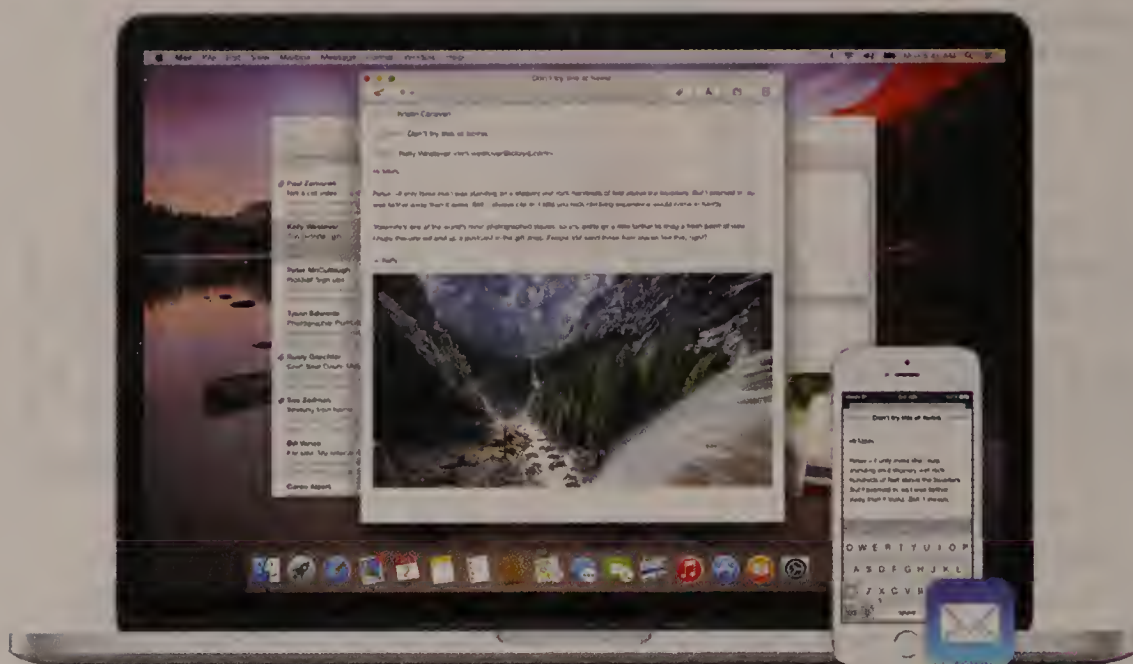
One enterprise concern, though, is how well extensions play with containerization and data-leakage-protection solutions, including Apple's Managed Open In framework, which controls what apps are used to open files. Presumably, Apple will offer some enterprise mobility-management capabilities to limit this functionality—likely basing it on whether apps are managed or unmanaged.

Text-message and call relaying from

iOS devices to Macs: This is a feature with a lot of benefits, including having caller ID on your Mac. But one of the big questions is how, or even if, this feature will interact with the unified communications, VoIP, or even older PBX systems many offices use. For small businesses, though, this feature will add much of that type of functionality at very little cost.

iOS messaging enhancements: The iOS Messages app is getting a whole range of new functionality in iOS 8, including support for voice and video

Apple has introduced many features that are likely to create or exacerbate what is often called the 'Dropbox problem.'



EASY SWITCH Start work on your iPhone and finish it on your MacBook with Handoff cross-device sharing.

messages as well as the ability to share additional data—including location data—as part of messages. It also offers new options for group message threads, such as a do-not-disturb setting and the ability to remove oneself from a given thread.

There is some security concern here, as these added capabilities introduce a new avenue for sharing sensitive data, but they don't dramatically change what's possible compared to past iOS releases.

Markup: The Markup feature, already available in Preview and now extended to Mail under Yosemite, lets users easily highlight and annotate email attachments for other users. This actually has a fair amount of potential for improving collaboration, but the concept isn't revolutionary by any stretch.

iOS 8's Notification Center widgets: Apple is finally opening up iOS's Notification Center to third parties, which will likely mean a deluge of new widgets. The company is also making it easier to respond to notifications using gestures—for example, you can accept a meeting invitation without launching the Calendar app. It will be interesting to see how companies adapt enterprise apps to take advantage of these productivity features.

No-touch access to Siri: In iOS 8, Apple seems to be following the trend of allowing for hands-free voice recognition by providing an always-on iteration of Siri that will respond to the voice

command “Hey, Siri.” That could raise privacy concerns related to sensitive health or financial information if Siri is indeed listening in the background, but the extent of the concern will depend on how Apple implements the technology.

App Store bundles: One big change with the App Store is that developers can now create app bundles—packages of multiple apps offered at a discount price because they're bought as a single purchase. This could be a boon for mass deployments of a suite of apps from a single developer for enterprises and

particularly in the education market.

The question here is whether Apple will implement this functionality along with its existing enterprise/education app licensing programs. If so, will organizations be required to assign individual apps from a bundle to separate users or will they need to assign the entire bundle to a user?

End-user access to beta/preview releases: Earlier this year, Apple announced its AppleSeed program, which allows consumers to access beta

and preview releases of its operating systems and software. The big challenge here is that you're talking about allowing untested, and potentially nonsecure, releases into an enterprise environment. That poses security issues as well as user-support issues.

So far, however, Apple seems more focused on delivering OS X releases through the program rather than pre-release versions of iOS. Given that enterprise Macs are typically managed more tightly than iOS devices, and that users are rarely allowed admin rights to the Macs, this isn't likely to pose a huge problem at this point.

NEW ENTERPRISE FEATURES

Apple also used the keynote to highlight some new enterprise-focused features in iOS 8, though it didn't elaborate on them. The list of new features includes:

- > More data protection for built-in apps
- > Per-message S-MIME encryption support in Mail
- > Thread-based notifications for messages in Mail
- > Auto-reply/Out-of-office support in Exchange environments
- > Information about coworkers' availability for use in scheduling events in the Calendar app

Although Apple didn't spend much

Apple currently dominates the enterprise mobility space and has described that market as crucial to its future growth.

time highlighting its plans for enterprise engagement in either iOS 8 or OS X Yosemite, the company does currently dominate the enterprise mobility space, and has described that market as crucial to its future growth.

As a result, many of the areas highlighted here as potential challenges will likely be incorporated into the company's MDM (mobile device management) framework, which is used to manage both iOS devices and Macs in enterprise and education environments. ■

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V I D E O G A M E V O T E R S . O R G

How to Work at Home With Kids

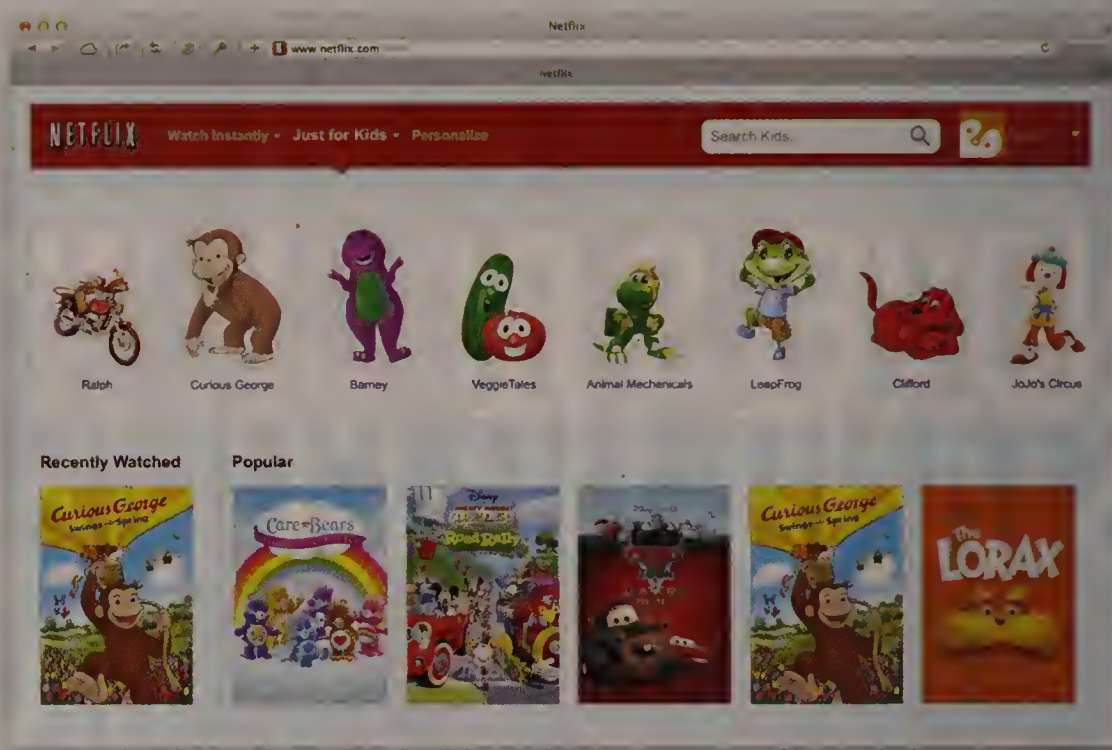
Check out these tips that can help you get work done while looking after kids.

BY JOE KISSELL

My wife and I recently welcomed our second child, and our older son has just turned four. When we tell other parents that we both work from home, their expressions predictably turn from envy to horror in a matter of seconds. On the one hand, yes, it's wonderful that we get to spend so much time with the kids at this age. On the other hand, the work we do requires extended periods of uninterrupted concentration, and those little bundles of joy are nothing if not distracting. How do we pay adequate attention to both our preschool kids and our work?



GAMEAWAY Educational iPad games help children learn while playing.



KID-FRIENDLY TV Children can have their own Netflix lists and watch videos on a computer or an Apple TV.

I don't pretend to have all the answers, because every situation (and every child) is different. But I can tell you a bit about what's worked for us.

NOT FOR US

Let's start with what we decided not to do.

Although our older child is in preschool for a few hours a day, hauling the kids off to daycare for the entire workday was never an option for us. Even if we didn't mind being away from our preschoolers for the bulk of the day, we could never afford that quantity of professional care.

Cost and limited space also precluded us from hiring a nanny. From time to time we've looked into parents' co-ops and other informal arrangements where people share child-care duties. But none of them have been a good fit.

As a matter of policy, we discarded all

suggestions that began with the words, "Why don't you just...." No, we're not going to "just" find a different job or "just" move in with the grandparents or "just" suck it up and try to write books while a toddler is screaming at us.

Instead, we use a combination of logic, creativity, technology, and caffeine to address our problem.

LOGIC

Since my wife and I both work from home, one obvious tactic is to take turns: She works while I take care of the kids, and then we swap. Unfortunately, that doesn't enable both of us to get a full eight hours of work in each day. We do need to eat, sleep, bathe, exercise, and spend time alone too, after all. And if you resist rigid schedules, as we do, this can be a hard road.

So we do take turns to some extent, and we address the issue of limited work hours in part by ignoring weekends (with an exception I'll explain in a bit). By working fewer hours each day but more days per week, we can, in theory, achieve the same result, while still having enough time left for a full night's sleep (if the children let us) plus meals and at least a few other day-to-day activities.

The thing is, we don't get paid by the

hour. It doesn't matter whether I've put in 40 hours this week, only whether chapter 9 is ready for my publisher. Sometimes that requires many extra hours of work. Furthermore, errands, travel, and a thousand other essential activities chip away at our already limited work hours.

All this means that no matter how carefully we plan, the parent on kid duty must often spend at least part of that time working.

CREATIVITY

Options for combining work and child-care depend a great deal on the kids' ages. For example, I can work at my standing desk with an infant strapped to my chest in a carrier. And up to a certain age, a child can nap in a bassinet or hang out in a playpen in my office with little effect on my work. Children who have achieved mobility but who are still too young to play unsupervised pose additional challenges.

Thanks to my MacBook Pro, iPhone, and iPad, I can get a certain amount of work done while hanging out with the kids in the living room or at the playground—even though I don't believe in multitasking. I can answer brief email messages, catch up with Twitter, and do certain “mechanical” tasks that require little thought or concentration and can be

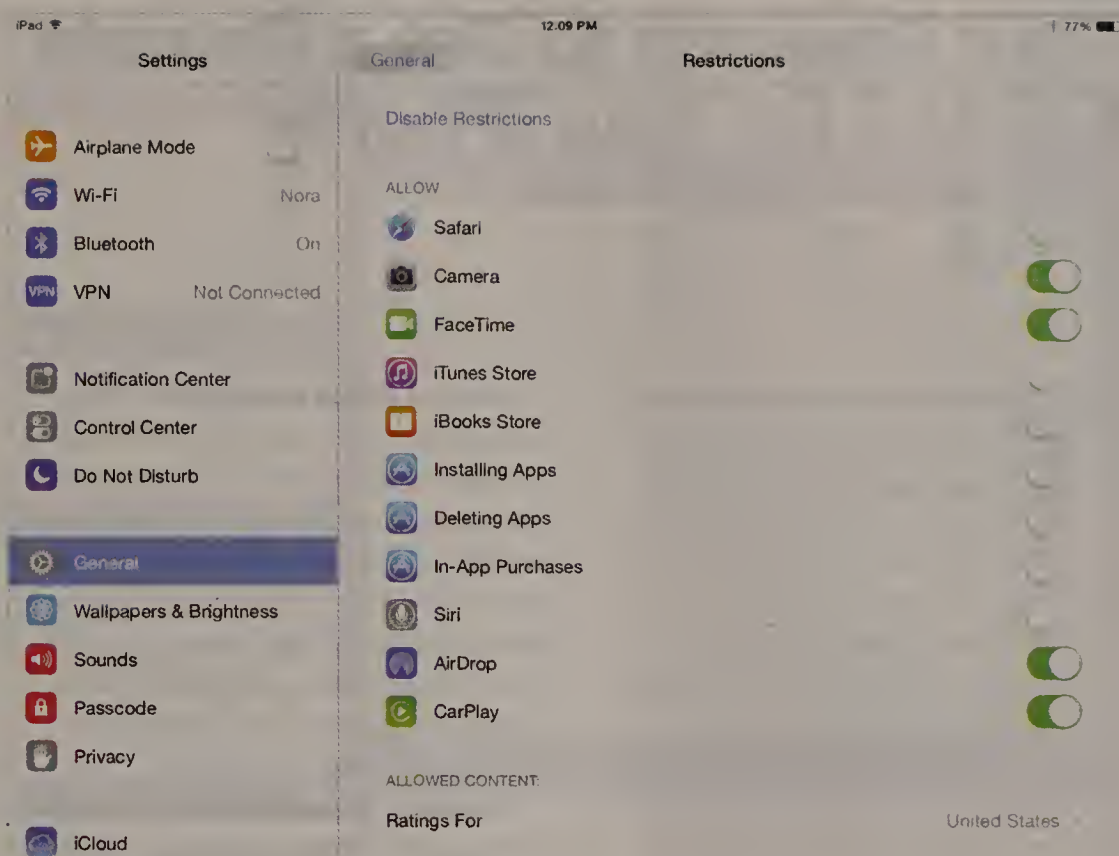
Thanks to my MacBook Pro, iPhone, and iPad, I can get a certain amount of work done while hanging out with the kids in the living room or at the playground.

interrupted without serious detriment. That's a start, anyway.

During crunch times, we might hire a babysitter for a few hours, even though we're both at home. But we also rely heavily on technology to help.

TECHNOLOGY

Say what you will about the evils of TV, but in our household, it's a lifesaver for those times when no adult can pay full attention to the kids. But we do try to avoid commercials whenever possible.



RIGHT RESTRICTIONS Enable parental restrictions before letting your kids use your iPad.

Streaming shows from Netflix or the iTunes Store on our Apple TV, or Amazon Instant Video on our smart TV, lets us pick educational shows that aren't interrupted every few minutes with ads.

Both physical toys and iPad apps engage our son's attention for hours on end. In fact, we've considered

when your child sleeps.” Getting less sleep than I prefer is just part of being a parent. For better or worse, I compensate with large quantities of coffee, courtesy of a high-tech, one-button superautomatic coffee maker.

BEYOND WORK AND KIDS

Sleep isn't the only sacrifice we have to make as work-at-home parents. We also find it necessary to curtail recreational Web browsing, TV watching, and other relaxing activities—to say nothing of keeping a tidy home. And we have little time or energy left for socializing. But for the sake of our sanity and family harmony, we do try to set aside at least one evening and one weekend morning or afternoon each week for fun family activities, with both parents “off the clock.” We sometimes have to force ourselves to put social events on the calendar for our own good, but it's worth the effort.

But most of all, we try not to focus on what we miss from our pre-children days and feel grateful for what we do have: lots of quality interaction among family members, right in our own house; a ten-second commute; and the freedom to make our own schedules. 🍵

budgeting a certain amount of money per month for educational iPad games on the grounds that they're a business expense—apps can help our kids learn while they enable us to get our work done. We do, of course, enable parental restrictions on the devices we let our kids use.

CAFFEINE

I can't tell you how many times I've heard new parents advised to “sleep when your child sleeps.” But my motto is “work

Four Reasons to Get a Remote Control for Your iPhone

Here's a rundown of your best options.

BY JOE KISSELL

Your iPhone is smaller than many remote controls—and can function as a remote control itself. So why would you need a remote control for your iPhone (or other iOS device)?

A few months ago I would have thought the idea ridiculous. But it turns out that adding a Bluetooth remote control to my iOS devices has enabled me to solve some interesting problems and has made those devices more useful. If you've never considered using a remote control for your iOS devices, I'd like to suggest four uses that may persuade you to try one.

Remote shutter release: Long before anyone used the term “selfie,” people put cameras on tripods, set a self-timer, and ran back in front of the camera to appear in a group shot. You can put your iOS device on a tripod too, but the built-in Camera app has no timer (although it will in the iOS 8 version). No worries: Use a button on an easily concealed remote control to snap the picture.



AIRTURN DIGIT II

Control media playback: Perhaps your iPhone is docked across the room, connected to your stereo or amplified speakers. Or maybe you're kicking back on the couch while a video from your iPad over on the coffee table is streaming to your Apple TV via AirPlay. A remote would let you pause, play, adjust volume, or otherwise control your media from farther away than arm's reach.

Control a presentation: When giving a presentation from Keynote or PowerPoint on an iOS device—especially one that's tethered to an external display—you may want to be able to navigate your presentation without being right next to that device. Some iOS remote controls offer this capability.

Activate Siri in your car: I recently bought a used car that has Bluetooth audio, but isn't new enough to have Siri Eyes Free. So, while I can use the car's microphone to ask Siri questions and get the responses through the car's speakers, I'd have to dig my phone out of my pocket (or wherever I've stashed it) to press the Home button. If I had a Bluetooth remote control mounted in a convenient place (such as on the steering wheel), I could activate Siri without any fiddling—and without taking my eyes off the road. (This tip works even if your car doesn't have Bluetooth, as long as your iPhone is close enough to pick up your voice clearly.)

PICK A MODEL

All Bluetooth iOS remote controls emulate keyboards—that is, each button maps



SATECHI BLUETOOTH MULTIMEDIA REMOTE

to a keyboard key—but the number of buttons, and therefore keys, is limited. (You could, of course, use a full Bluetooth keyboard as a remote control, but its size and shape usually wouldn't be a good fit for such tasks.) Different remote controls have different combinations of virtual keys, which means that not every remote is suited for every job. So, once you've chosen a task, be sure to find a remote control that supports the relevant keys. Broadly speaking, such remotes fall into a few categories:

Multimedia remotes: Remote controls designed for multimedia typically have buttons for volume up

Adding a Bluetooth remote control to my iOS devices has enabled me to solve some interesting problems and has made those devices more useful.



HOMESPOT LOW ENERGY SHUTTER
REMOTE CONTROL

and down, previous and next track, play and pause, and mute. (When you're in a camera app, the volume-up button doubles as the shutter release.) You may also find a Home button (to activate Siri), a button for hiding and showing the keyboard (an essential feature, because without it, your iOS device will assume the remote is a full keyboard, and you'll be unable to use the virtual keyboard), and more. Examples in this category include the model I bought—the Satechi Bluetooth Multimedia Remote (\$35; satechi.net)—and iStabilizer's Shutter Remote for iOS (\$40; istabilizer.com).

Multimode remotes: If you want to be able to do more than control your media but you don't want to deal with tons of buttons, you can pick up a more-advanced remote that offers multiple modes—for example, a multimedia mode, a presentation mode (in which the buttons can control a Keynote or PowerPoint presentation), and an accessibility mode (in which the buttons navigate between apps, icons, and pages, with optional VoiceOver feedback). You switch modes by using a slider or by holding a particular button when you turn on the remote control's power. Examples include the Satechi Bluetooth Smart Pointer (\$60; satechi.net) and the AirTurn Digit II (\$40; airturn.com).

Shutter releases: Some iOS remote controls contain just a single button, which serves as a remote shutter release. The HomeSpot App-Enhanced Low Energy Shutter Remote Control (\$20; mogeeks.com) and the ShutterBall (\$25; myshutterball.com) fall into this category.

Siri-only remote: I know of one iOS remote that also has a single button—but not for photos. The Mobile Home (\$79; drivewithsiri.com) features a large Home button, for activating Siri in your car. ■

THE MOBILE HOME



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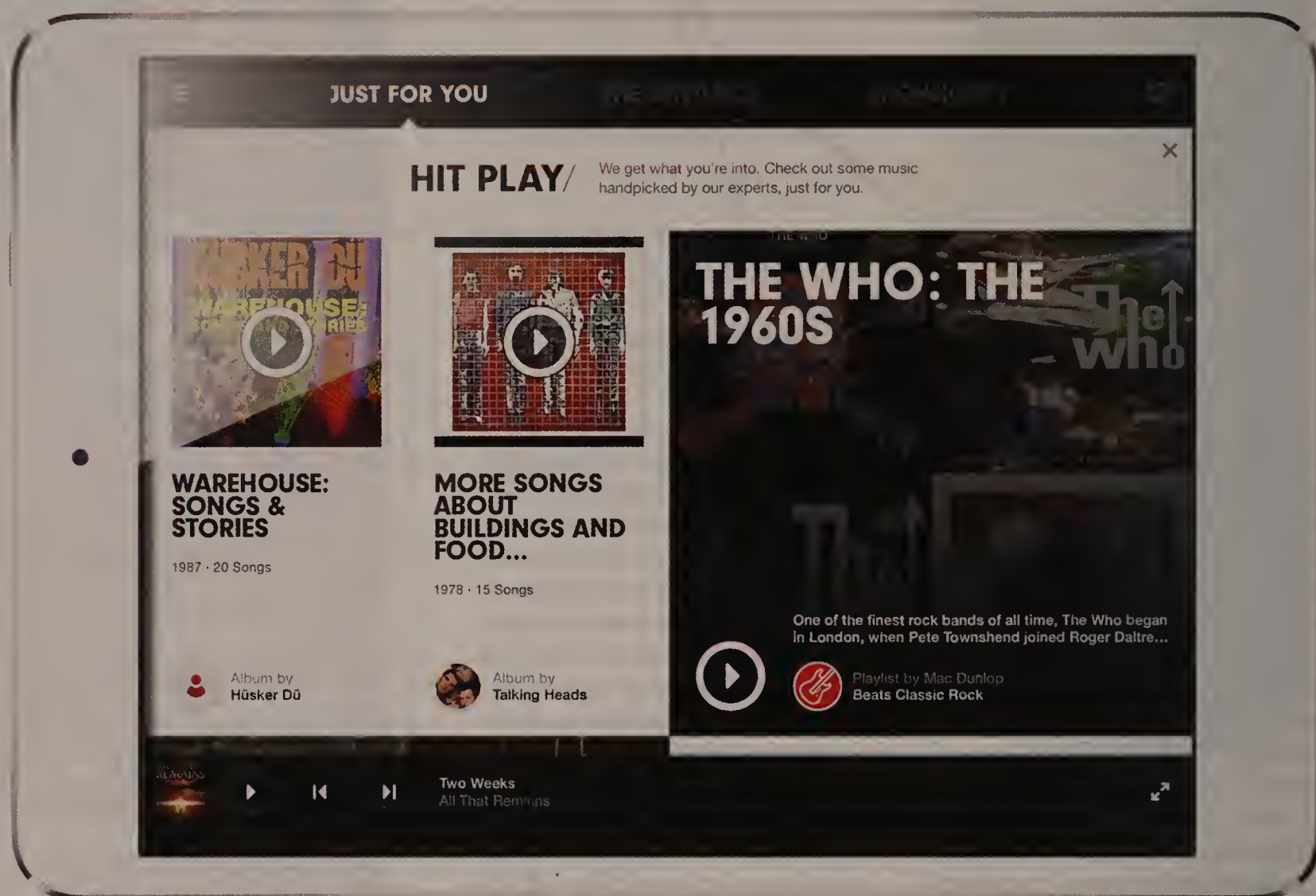
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PLAYLIST

Everything You Need to Know
About iPods, iTunes, and
Mac-Based Entertainment



Apple and Beats: What's the Deal?

Here's a rundown of what you need to know about the acquisition.

BY CHRISTOPHER BREEN

Apple recently announced that it was acquiring Beats Electronics and Beats Music, the companies known for popular headphones and a promising music subscription service. Here are some of the important details of the deal.

What is Apple paying for Beats?

Apple is paying \$2.6 billion initially and, in the future, will invest an additional \$400 million.

Does all that money go to the founders?

Beats was cofounded by Jimmy Iovine and Dr. Dre (Andre Young), but although they'll realize several hundred million dollars from the deal, not all of the money will go to them.

Companies such as the Carlyle Group and Universal Music have invested in Beats and will take their cut when the deal reaches completion sometime in the fourth quarter of this year.

Will the Beats brand exist once the deal is complete?

Yes. Even though Apple will gain ownership of both Beats Electronics and Beats Music, they will each continue to exist as separate brands.

What does Apple get from the Beats deals?

Three things: Beats Electronics, which is responsible for the company's headphones; Beats Music, the subscription

arm of the company; and the services of both Iovine and Dr. Dre.

More specifically, Beats Electronics makes over a billion dollars a year on its headphones and accessories, which will add to Apple's bottom line. On top of that, Beats Music gives Apple an operating subscription music service, which means Apple doesn't have to create one from whole cloth.

And Iovine and Dr. Dre (who will join Apple and will work under Eddy Cue, the company's senior vice president of Internet software and services) have connections in the entertainment business that may help Apple with current and future entertainment deals.

Does this mean that the next iOS devices will ship with Beats-branded headphones?

Probably not. Currently the least expensive model in Beats Electronics' headphones lineup—the urBeats earbuds—retails for just under \$100. Beats might have some say in the design of future headphones, but Apple is unlikely to mix the two brands together in this way.

Will iTunes Radio disappear because of the Beats deal?

Apple has offered no indication that this acquisition will affect iTunes, iTunes Radio, or iTunes Match in any way. In Apple's press release, Cue described Beats as supplementing both the free iTunes Radio service and the download business of the iTunes Store.

Wasn't Beats involved with HTC?

It was. In 2011, the Taiwan-based HTC paid \$300 million for a 50 percent stake in Beats. It sold back half that share in 2012, and the rest in 2013. Iovine claims that the deal didn't work out because of a culture clash between the two companies. Prior to the HTC partnership, Beats had teamed up with Monster.

What makes Beats Music different from other music subscription services?

Beats Music focuses a great deal on music curation. Rather than depending

largely on an algorithmic music discovery system—in which the service's music recommendations are based on the kind of music you've listened to in the past or the songs you have in your device's library—Beats helps you discover music via playlists created by people who know particular genres inside and out. If you want to explore jazz, for example, you are sure to find hundreds of playlists that will help you on your way.

That, however, doesn't mean that Beats has abandoned algorithms altogether. The service will still offer suggestions based on artists you like, music you've listened to, and a mood-based discovery system called The Sentence. You can search the service by artist, album, and track, as well.

How many subscribers does Beats Music currently have?

It has around 250,000. In comparison, Spotify (which, unlike Beats Music, is available internationally) boasts more than 10 million paying subscribers.

So Beats Music is available only in the United States?

Currently, yes.

How many tracks does Beats Music offer for streaming?

Around 20 million.

What does it cost to subscribe to Beats Music?

Individual subscriptions cost \$10 a month and permit you to stream to up to three devices.

If you're an AT&T customer, you can purchase a family plan for \$15 a month, which allows up to five people to stream music on up to ten devices. You can try the service for free for two weeks.

Can I download music from Beats?

Yes. Beats Music allows you to download tracks for offline play.

Which devices work with Beats?

You can use a computer with a compatible Web browser (Safari, Chrome, Firefox, or Internet Explorer), a compatible iOS

device (iPhone 4 or later, iPad 3 or later, the fourth-generation iPod touch or later) running iOS 6 or later, an Android device running Android 4.03 or later, or a Windows Phone device. Sonos multiroom music systems also support the service. Currently, however, Beats Music is not available on the Apple TV.

What's the audio quality like?

Through your computer's Web browser, Beats Music streams the majority of its tracks as 320-kilobits-per-second MP3 files. A minority that aren't available at that bit rate stream at 256 kbps.

On mobile devices the service's standard audio quality is 64-kbps HE-AAC. You can choose instead to stream at a higher quality, namely 320-kbps MP3. The point of using lower-quality (and therefore, smaller) files is to help you stay within your data plan when you're streaming over a cellular connection. (For more on Beats, see *Help Desk* on page 92.) ■



STYLISH BEATS
As part of the deal, Apple gains hardware, in the form of headphones.

Sleep Tight: Ambient Audio for iOS

Check out our favorite ambient sound apps.

BY CHRISTOPHER BREEN



SOOTHING SOUNDS

Naturespace has some wonderfully natural-sounding tracks.

Whether you want help falling asleep or you wish to block out the sounds of an open office, ambient audio can be a useful tool. And it need not be confined to the tiny-speakered and tinny-sounding consumer “sleep machines” you find advertised in the back of in-flight magazines. With your iOS device you can be wrapped in an otherworldly environment in seconds.

AMBIENT AND iOS

While not as common as to-do list managers and *Flappy Bird* clones, ambient audio apps are fairly prevalent on the App Store. These are a few of my favorites.

Naturespace: Holographic Audio Theater’s Naturespace (free with in-app purchases; naturespace.com) is a player for the company’s ambient nature sounds in addition to a storefront for sounds you can purchase for \$2 each (or in bundles priced at \$10). The app comes with six tracks—Daybreak Songbirds, Summer Mountain Valley, Infinite Shoreline, Riverwind Dreaming, Rain Into Water, and Night at Lake Unknown. They’re perfectly fine for masking out other

sounds during the daytime, but I would find them too intrusive to sleep to.

If sleep is what you’re after, you’ll want to turn to the store. Here I found a couple of terrific rain sounds—Back Home and

With your iOS device you can be wrapped in an otherworldly environment in seconds.

Treehouse Rain. Back Home is set in a suburban environment where you can hear rain splattering on pavement as well as running through metal gutters (accompanied by a distant thunder). The quality of the recording is outstanding. Treehouse Rain is equally good if you prefer a more natural-sounding rain mixed with a touch of wind-swept branches.

White Noise: Tmssoft’s White Noise (\$2; tmssoft.com) is more than just a white-noise generator. It includes not only the kind of nature sounds you’d expect (rain, crickets, ocean waves, and wind) but also some unexpected offerings, such as campfire, cat purring, air

conditioner, clothes dryer, dishwasher, heartbeat, crowded room, and train ride.

One of White Noise’s highlights is that you can mix up to five sounds together to create your preferred audio environment. The app also presents the free White Noise Market, where you can download additional sounds at no cost.

Sleep: Red Hammer Software’s Sleep (\$2; rhsoftware.net) offers more than 100 sounds (some include ambient music) that you can trigger individually or in groups from your iOS device. As with White Noise, you can combine multiple sounds—say, ocean waves with rain and perhaps a bit of waterfall to complete the aqua-themed mix. (In contrast to White Noise, though, Sleep lets you mix far more than five sounds.) Just tap the *Mixer* button, select the sounds you want, and then—after tapping the *Settings* button—adjust the volume of each sound. You can save your mixes for later playback.

Sleep also has a store for obtaining extra sounds. If I have one complaint about the app, it’s that some of the sound loops are so short so that you start to recognize patterns. And focusing on that repetition may keep you awake.

The Eno apps: Musician/producer/artist Brian Eno is widely considered to be the father of ambient music, with such releases as *Discreet Music* and *Thursday Afternoon*. Eno and musician/software designer Peter Chilvers have created a trio of apps—**Bloom**

(\$4; go.macworld.com/bloom), **Scape** (\$6; go.macworld.com/scaper), and **Trope** (\$4; go.macworld.com/trope). All three allow you some control over what the resulting music sounds like. In the case of Bloom, you make adjustments by tapping the screen. With Scape you drag elements into the screen that modify the character of the music. And in Trope you drag on the screen.

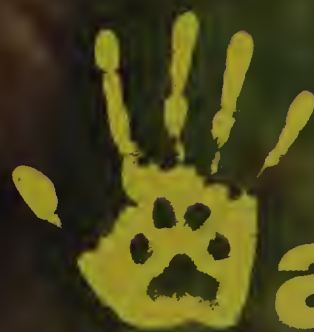
I’m a fan of Eno’s work and so I enjoy the music that the apps generate, but some people may find it a bit eerie. My guess is that Eno and Chilvers designed these three apps with interaction in mind. And they are a joy to play with. ■



**“ SURE,
AT FIRST I WAS A LITTLE TAKEN ABACK
BY THE WHOLE PEEING STANDING UP THING.
BUT I TAUGHT HIM TO THROW A STICK
AND NOW HANGING OUT WITH HIM
IS THE BEST PART OF MY DAY.”**

**—EINSTEIN
adopted 12-09-10**

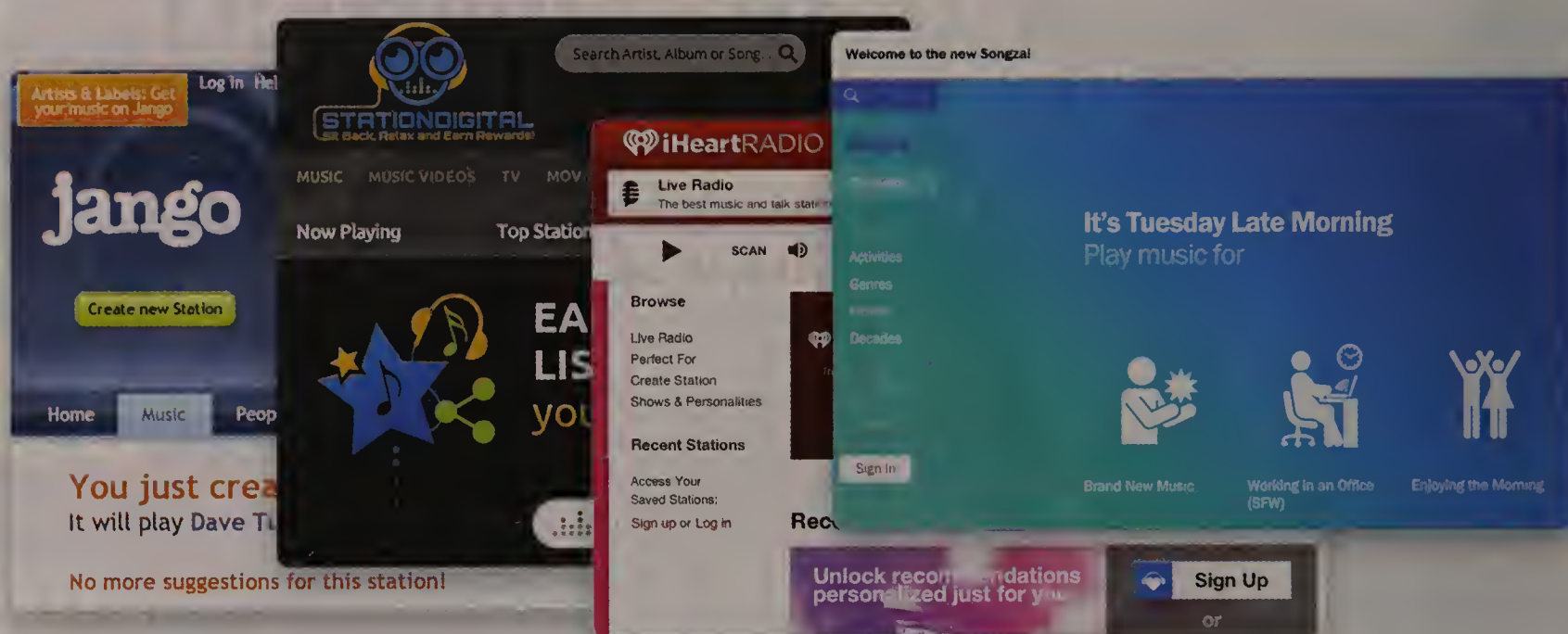
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Streaming Services You Might Have Missed

These five emerging services bring their own twist to the music stream.

BY ANTHONY DOMANICO

The streaming music scene seems like it's ruled by a few heavyweights, with Pandora, Rdio, and Spotify slugging it out for your heart, mind, and eardrums. But that's only part of the picture. Just as a number of lower-profile video streaming services vie with the likes of Hulu and Netflix, music streaming services you've probably never heard of are looking for ways to make their mark.

Which subscription music service will emerge as the next Pandora or Spotify? We've picked five alternatives.

JANGO

1 Like Pandora, Jango (jango.com) lets you create personalized radio stations based on an artist or song you want to hear. Simply type an artist or song into the search box, and Jango starts playing music that fits the bill. It also offers apps for iOS and Android as well as a decent Web interface providing lyrics, artist info, and even the ability to watch the music video when available.

Jango is a free service, which means ads. And unlike some of its rivals, it gives you no way to buy your way out of them.

That said, Jango takes a slightly different approach than Pandora or Slacker Radio does with ads: Instead of serving them up after a certain number of songs, Jango plays one video and/or audio ad per day.

What's good about Jango: Sound quality can be a subjective thing, but I appreciated what I heard on Jango. Music streams fast—and in contrast to its rivals, Jango offers unlimited skips. (Frequent listeners often cite skip limits as one of the most annoying parts of streaming radio.)

What could be better: Jango's music catalog is fairly robust, but it's a bit smaller than what you'll get from more widely known services.

STATIONDIGITAL

2 Boasting a library of more than 20 million songs, StationDigital (stationdigital.com) offers curated stations; users can also create a station of their own based on a particular song or artist. The service has apps for iOS and Android; it says Windows Phone and BlackBerry apps are coming soon.

Listening via a browser treats you to karaoke-style lyrics that follow along with the currently playing song.

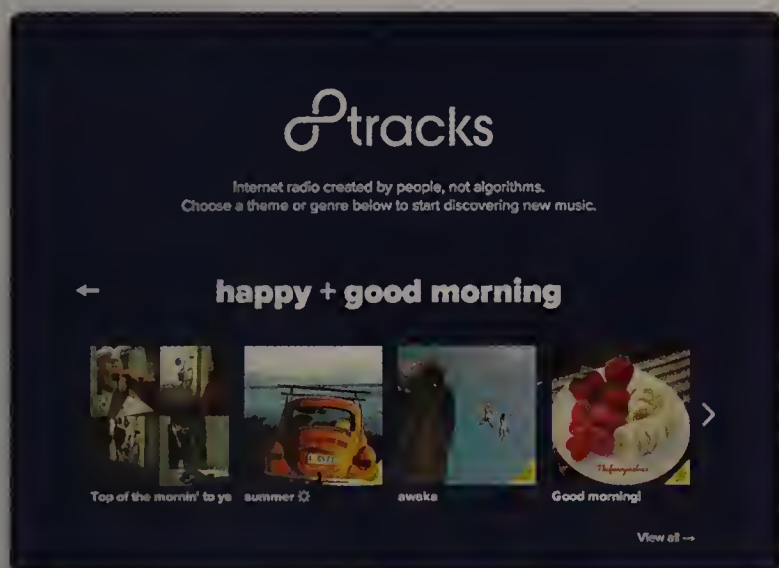
You'll encounter ads if you listen for free, but StationDigital also offers a premium subscription—\$4 per month or \$36 for a year—that removes the ads while presenting higher-quality audio and fewer listening interruptions during the day. Premium subscribers also get access to a desktop application for listening to the StationDigital service without a Web browser.

What's good about StationDigital: A unique reward program bestows stars—virtual currency that you can redeem for songs, albums, and other items on the StationDigital store. You earn stars for signing up, sharing, and voting on music, or just listening to your favorite stations.

What could be better: While the service itself is rock solid, the same can't be said of StationDigital's mobile apps, which need a major interface overhaul.

iHEARTRADIO

3 Most streaming services let you create customized radio stations or use preset genre stations; iHeartRadio (iheart.com) takes the idea a step further. Here you can create custom stations by artist or song, or you can



listen to live radio stations from all across the United States. iHeartRadio also allows you to set a mood or an activity, and it then plays songs that fit the situation.

iHeartRadio features apps for iOS, Android, BlackBerry, Kindle Fire, and Windows. You can also get it on connected devices such as Amazon's Fire TV, Logitech Smart Radio, Roku boxes, Sonos gear, Xbox consoles, and Yahoo smart TVs.

What's good about iHeartRadio:

iHeartRadio's presence reaches far and wide. It's perfect for folks who either travel often or have moved to a new spot and just want to listen to the familiar radio stations from their hometown.

What could be better: A major limitation of radio stations—and iHeartRadio, by extension—is that they play what they want, not what you want. Other services offer content better tailored to you.

SONGZA

4 Although there's a lot to be said for music services that let you play whatever you want, whenever you want it, sometimes you just want to hit a button and have the perfect music start playing. When you first launch Songza (songza.com), the service displays the time of day and several time-appropriate activities to select from. On a Monday night, for example, you can ask Songza to play music for studying. Select a subgenre that fits your music preferences, and Songza will play tunes that suit your chosen activity. Songza also offers genre stations, if that's what you prefer.

Several streaming music services you have probably never heard of are looking for ways to make their mark.

You can listen via apps for iOS, Android, or Windows Phone, or through a simple, intuitive Web interface.

What's good about Songza: Songza probably has the most creative music selection tool this side of Beats Music, and it gave me the best overall experience.

What could be better: Its creative music selection is solid, but its apps strain your device's battery.

8TRACKS

5 Most of today's streaming services aim to provide expert or algorithm-developed playlists. 8tracks (8tracks.com) is different. With this service, you either create a mix of at least eight songs or listen to mixes that other users created. Tons of user-created mixes span multiple genres, so it's easy to find music to keep the party going.

A free service, 8tracks has apps for iOS, Android, BlackBerry, and Windows Phone, as well as a smattering of third-party apps for other platforms. The premium 8tracks Plus offering removes ads for \$50 per year.

What's good about 8tracks: The ability to enjoy user-created mixes gives 8tracks a unique social component.

What could be better: Each of the 8tracks apps is well designed, but I found it difficult to discover content among the sea of playlists out there. Better search tools would greatly improve the experience. ■

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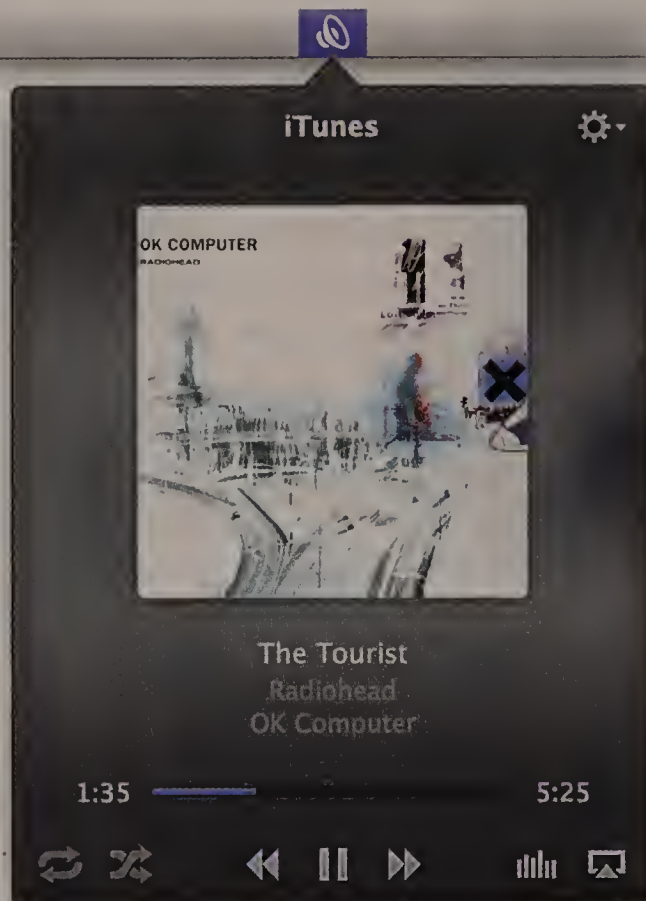
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FLOATING CONTROL

Equilibrium offers both menu-bar and floating window controls.



Four Ways to Control iTunes

Use iTunes without displaying its full interface.

BY KIRK MCELHEARN

With iTunes, you can control music playback from the window, but if you don't want the full interface visible while you listen to music, you have other ways to tell the app what to do. I'll show you how to control iTunes using built-in features as well as third-party apps, so that you can hide the window when you play your songs.

MEDIA KEYS

The easiest way to control iTunes is via media keys, which reside among the F-keys found on the top row of your keyboard. Press the <F8> key to play or pause music. Press <F7> to skip back—either to the beginning of the currently playing track, if you've played less than 10 seconds of it, or to the previous track. <F9> skips ahead to the next track.

To the right of those keys are volume buttons, but they affect the system's

volume, not that of the iTunes app. <F10> mutes your speakers, <F11> decreases the volume, and <F12> increases it.

MINIPLAYER

The iTunes MiniPlayer is a floating window that lets you control iTunes without having the full app visible. To show it, choose *Window → MiniPlayer*, or press ⌘-<Option>-3. To display the MiniPlayer and hide the iTunes window, select *Window → Switch to MiniPlayer*, or press ⌘-<Option>-M. (You can return to the full window with the same shortcut.)

The MiniPlayer provides more than just Play, Pause, Next, and Previous buttons and a view of the album art. Using controls at the bottom of the window or within a menu

that appears on the right side of the player, you can rate a track, start Genius, create an iTunes Radio station, and more.

APPLE REMOTE

If you have an Apple remote—the hardware kind, not the iOS app—you can use that to control iTunes on your Mac. You can start and stop playback with the device's Play/Pause button. The click ring surrounding the central Select button lets you move to the previous or next track, as well as raise or lower the volume.

THIRD-PARTY APPS

A number of third-party apps permit you to control iTunes without its window remaining visible.

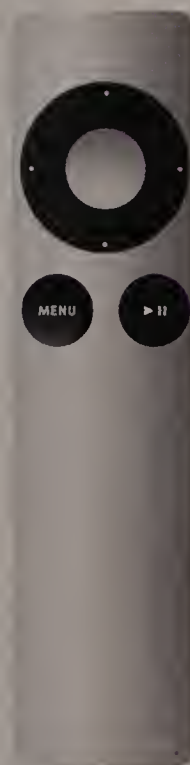
Sizzling Keys: Yellow Mug's free basic version of Sizzling Keys (yellowmug.com/sk4it) gives you a full range of keyboard shortcuts to control iTunes, set ratings, change the volume, and more. A \$5 pro version lets you access other controls from the keyboard, such as skip forward or backward, and shuffle and repeat.

Tunelet: The \$2 Tunelet by Aeolian Apps (aeolianapps.com) is a menu-bar controller. Click its menu—or press a shortcut—to access controls, view album art, and search your iTunes library.

Equilibrium: The \$3 Equilibrium (sunflowersw.com) doesn't display the name of the currently playing track in the menu bar, but it has a floating artwork controller. Access Equilibrium from the menu bar, and use its full range of controls. You can manage playback, toggle shuffle and repeat, and even select an AirPlay output. The app also has keyboard shortcuts for play/pause, next, previous, and volume.

Skip Tunes: The \$3 Skip Tunes (skiptunes.com) also offers control buttons in the menu bar. You can click to play or pause music, or to go to the next track. Click the music-note button to display a floating controller with album art and additional controls.

The app can control Rdio and Spotify, too, and it provides notifications with album art. ■



APPLE REMOTE

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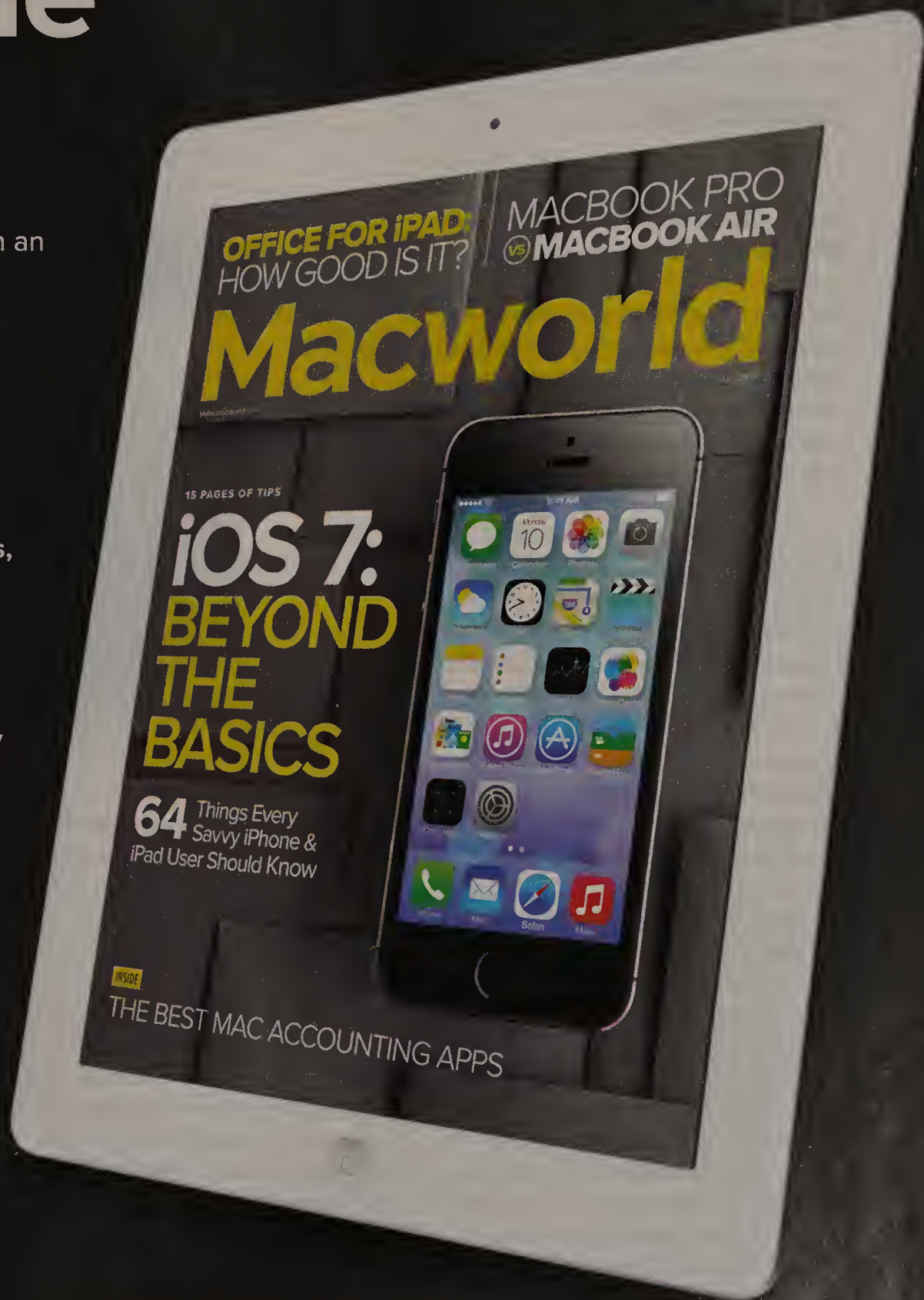
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Mac 911

Solutions to your most vexing Mac problems.

BY CHRISTOPHER BREEN

Need an Annotated iPhoto Slideshow? Turn to Keynote

Q: I have some information that I'd like to present to a group via a slideshow that they'll watch on their computers. I have the pictures I need in iPhoto, but I can't find a way to annotate them. Is it possible to do so?

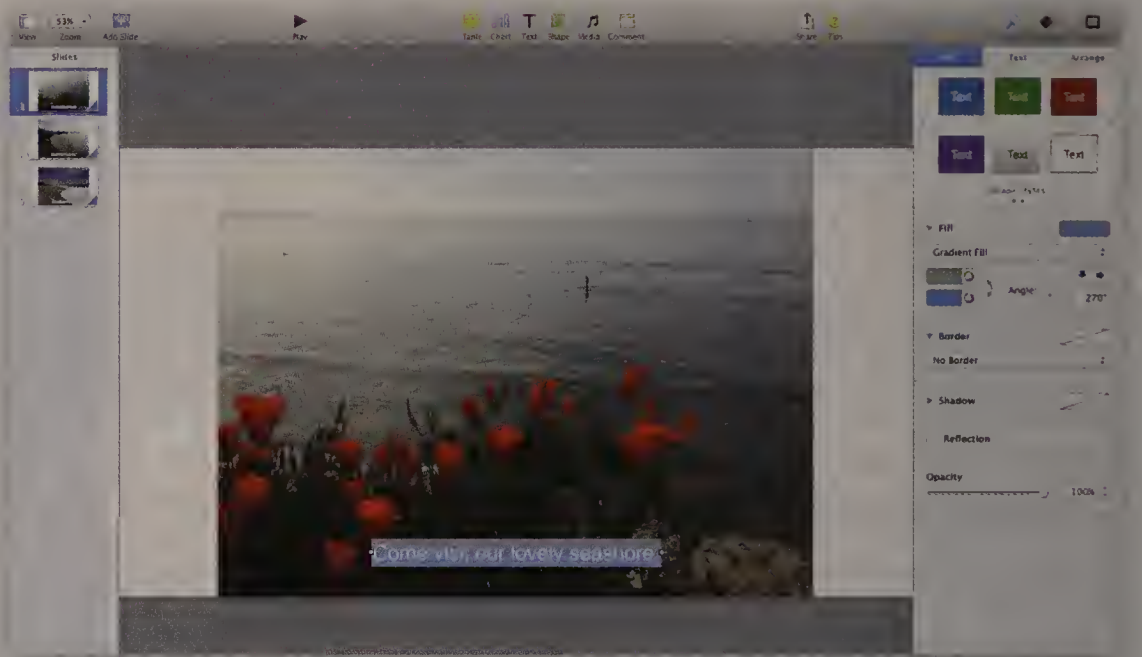
Doug McGowan

A: Not in an effective way. I'd turn instead to Apple's Keynote.

Launch Keynote, select the *White* theme, and click *Choose*. With the latest version of Keynote, the *Format* button at the top of the window should be highlighted. In the area below this button, click *Change Master* and choose the empty slide at the bottom right of the list. You should now have a single empty slide.

Click the *Media* button at the top of the window, and in the Photos tab navigate to the first image you want to use in the slideshow and click it. Keynote will add the image to your slide. Now click the *Text* button at the top of the window to add a text box. Enter the text, configure its font and size, and drag it to where you'd like the caption to appear. With the text selected, choose the *Style* tab in the sidebar to the right and then click *Color Fill* or *Gradient Fill* from the Fill area. Choose an appropriate fill to go with your text.

Hold down the <Option> key, and in the Slides thumbnails area drag the first slide down to make a copy of it. Click that slide's image and press the <Delete> key to remove the image (but keep the caption). Click the *Media* button again to add a different image.



CAPTION IN ACTION Keynote gives you the power to create slideshows with both images and captions.

Press ⌘-<Shift>-B to send that image to the back so that the caption is exposed. Triple-click the caption to select all of its text, and then enter the caption you want for that slide.

Repeat this process for additional slides. Then select all the slides and click the *Automate* button near the top-right of the Keynote window. Click *Add an Effect* and choose a tasteful transition (Dissolve is always a safe bet). Finally, choose *File* → *Export To* → *QuickTime*. In the Export Your Presentation sheet that appears, don't change the Self-Playing setting in the Playback pop-up menu; just choose how long each slide will play, select an output format (720p, 1080p, or Custom), and click *Next*. In the following window name your movie, choose a place to save it to, and click *Export*. Soon your slideshow will be saved as an MPEG-4 movie, ready for you to share with the group.

Share iTunes Content With Your Family Right Now

Q: I'm interested in Apple's announcement of the Family Sharing feature, where you can share iTunes media with your family. Is there any way my family and I can do something like that now in Mac OS X Mavericks?

Frank Stillman

A: A common misconception is that you can use just a single iCloud account per device for everything that the device does. This isn't the case. Your iCloud account and iTunes/App Store/iBookstore account can be different.

At this very moment you can create an Apple ID, link it to a credit card, and use that ID with up to ten devices, including computers. (You can't use the ID with more than five computers, however.) So, when Mom purchases the

Residents' *Not Available*, any other device using that Apple ID can also download the album. This works not only with music but also ebooks, videos, and apps. To add that account in iOS 7, just tap *Settings* and then tap *iTunes & App Store*. At the top of the resulting screen, you'll see an entry for your Apple ID. If you see another ID there, tap it and then tap *Sign Out*. Then enter the new "shared" ID.

This procedure may sound pretty close to Apple's plans for Family Sharing, which will ship with OS X Yosemite and iOS 8. Under those operating systems, I imagine that Apple will do everything it can to make a double identity—where you have content that you own as well as family-owned content—more transparent.

Set a Default 'To' Address in Mavericks's Mail

Q: My husband has three email addresses. I almost always want to send messages to his Mac.com address, and for years that's what Mail automatically used when I typed his name. But when I upgraded to Mavericks, Mail decided that I wanted to send to his Yahoo address. So every time I add him to an email, I have to manually change the autofilled address to his Mac.com address. Is there a way to force Mail to always use the same address?

Fran Drakes

A: With Mavericks's Mail, autofill will choose the first alphabetical address, regardless of the order it appears in a contact's card. For instance, in the case of bubba1@example.com, bubba2@example.com, and bubba3@example.com, bubba1 will be autofill's choice. To work around this, you can take the choice out of autofill's virtual hands and tell Contacts and Mail what you want.

Launch the Contacts app, select your husband's name in your list of contacts, and choose *File → New Group From Selection*. This will create a new untitled group with a highlighted name. Rename

that group something like "hubby". Now choose *Edit → Edit Distribution List*, and in the sheet that appears select your "hubby" group. You'll see your husband's name along with the email addresses that appear on his contact card. Select his Mac.com address so that it turns black, and click *OK*. What you've essentially told Contacts is that within this group (of one), the Mac.com address is the default.

Return to Mail, create a new message, and in the "To" field enter **hubby**. When you press the <Return> key, that address should change to his name and use his Mac.com address.

At a later time, should you wish to send a message to a different email address of his, enter his name rather than "hubby" and then choose the address you wish to use from the autofill list that appears.

Extract the Audio From a Blu-ray Disc

Q: I have a concert recording on a Blu-ray disc. I'd like to use my Mac to extract the audio from it so I can play its music on my devices, but I haven't any idea where to start. What do you suggest?

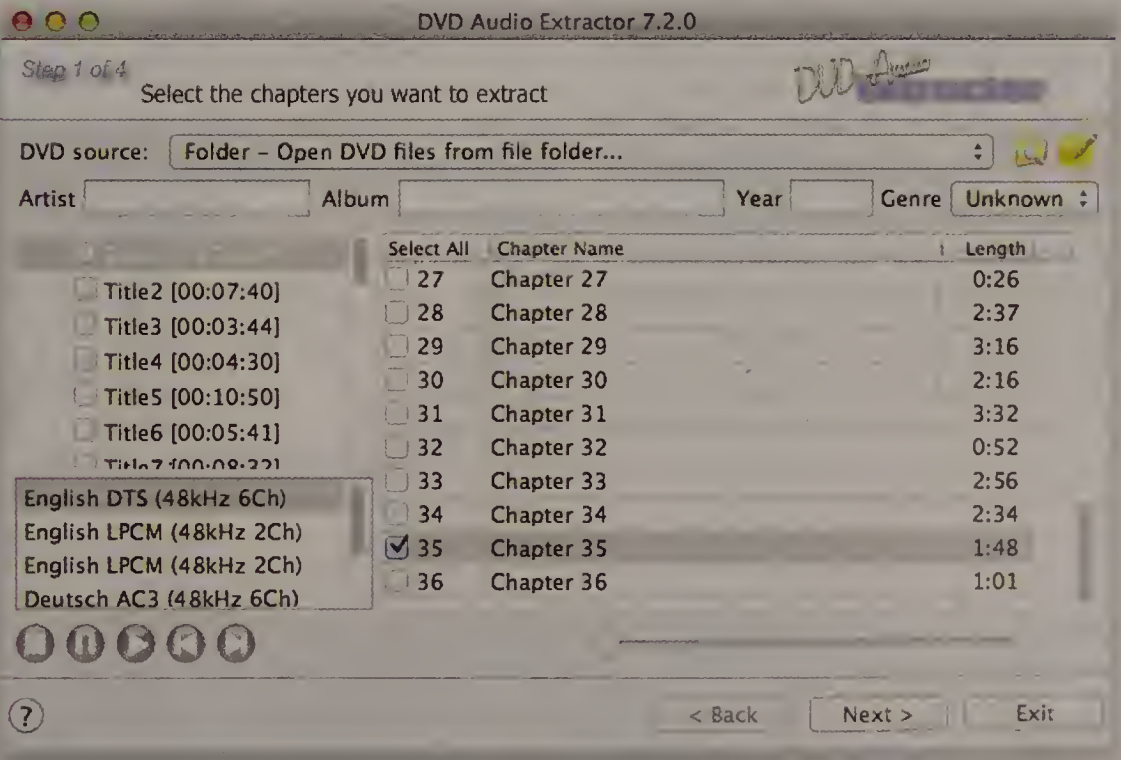
Derrick Crandall

A: First, you need a Blu-ray player for your Mac. Connect the player to your Mac via the supplied cable (likely a USB connection).

Now, download a copy of MakeMKV (makemkv.com). This is a utility for ripping Blu-ray and DVD discs. Launch MakeMKV; from its Source pop-up menu, choose the Blu-ray player. Then choose *File → Backup* and select a destination large enough to hold the disc's contents (this could be around 40GB). In the MakeMKV Disk Backup window that appears, enable the *Decrypt video files* option and click *OK*. MakeMKV will make a copy of the disc and, in the process, remove its protection. This action can take up to an hour.

When you return from lunch, quit MakeMKV and then download a copy of Computer Application Studio's DVD Audio Extractor (dvdae.com/download). The full version of this software costs \$38.50, but you can use a free full-featured trial copy for 30 days.

Launch DVD Audio Extractor, and from the "DVD source" pop-up menu choose *Folder – Open DVD files from file folder*. Click the file browser icon just to the right of this pop-up menu, and navigate to the folder that holds the copy of the Blu-ray you just ripped. Click *Open* within the navigation



PLAYING THE BLU You can pull audio from a ripped Blu-ray disc using a tool such as DVD Audio Extractor.

window, and the contents of the now-virtual disc will appear.

At this point it's your job to locate the particular audio files you're after by way of the Title and Chapter panes within the app's window. (The play button in the bottom-left corner can help by allowing you to preview chapters.) When you've selected exactly what you want, click *Next*.

In the following window, choose the output format, sample rate, channels, and bit rate for the extracted audio. For an iOS device you might choose AIFF, 44100Hz, stereo, and 16 bits. If you have a surround-sound AV system capable of playing multichannel files, you might elect to maintain the original six channels and 24 bits. Once you've made your choices, click *Next* again.

Now choose your output location (the Documents folder within your user folder is chosen by default) and click *Next* again. Finally, click the *Start* button in the next screen, and the app will create the audio files.

Copy Address Lists From Excel Into Apple's Mail

Q: I have an Excel spreadsheet that contains a list of email addresses. Before Mavericks, I could create an email message that used all these addresses simply by copying the cells and pasting them into a message's To or Bcc field. With Mavericks's Mail the necessary comma is missing between each address when I paste them in. Without the commas I can't send the message, because I'm told the addresses aren't formatted correctly. Is there a way to fix this?

Benjamin Peacock

A: There is, and you do it all within Excel. For example, let's say that all your addresses are in Column A, beginning with the A1 cell. Click in the B1 cell and enter `=A1&" , "`. Then press <Return>. The address in A1 will appear in B1, but it will be followed by a comma (you'll see the entry as "bubba@example.com,").



Mac 101

Identify VPN Protocols in OS X

Q: I'm helping out at my spouse's small office, and I want to configure her colleagues' Macs with the same VPN configuration I somehow successfully set up for her many months ago. The problem is that I can't remember which protocol I had originally used—L2TP, PPTP, or IPSec—and nothing in System Preferences' Network preference tells me. How can I tell the difference?

via the Internet

A: When you first set up a VPN connection by opening the Network preference, clicking the plus (+) button near the bottom-left corner, choosing *VPN* from the Interface pop-up menu, and selecting the kind of protocol you'll use from the VPN Type menu, the Service Name field displays the protocol in parentheses—"VPN (L2TP)", for example. Of course, if you change that service name (as most people do), you lose the broad hint OS X provides. Fortunately, there's another way to identify the protocol.

The three kinds of connections display different options. For an L2TP connection you'll see entries for Configuration, Server Address, and Account Name. A PPTP connection adds an Encryption pop-up menu to those items. And when you set up an IPSec connection, you lose the Configuration pop-up menu.

Move your cursor to the bottom-right corner of the selected B1 cell until you see a black plus (+) cursor. Double-click that corner with the cursor showing, and all the addresses in Column A will appear in Column B in the comma-added format. All you have to do is copy the addresses from Column B into a Mail message.

Fill Your Home With Beats Music

Q: I've just heard that Apple has acquired Beats Music. I've never used a subscription music service before but am curious to try. I'd like to hear its music on my devices other than just my Mac. What are my options?

Shawna Collings

A: As I write this article, the acquisition announcement is all we have to work with, and iTunes currently provides no tie to the Beats subscription service. For the time being, users can access Beats as they always have done.

Although Beats doesn't offer a Mac app right now, you can stream its music through a Web browser. Do so, and you

can then route that audio through AirPlay—send it to your Apple TV, for example. On a compatible Mac running Mountain Lion or later, hold down the <Option> key and click the *Sound* menu-bar icon, and you'll see any Apple TVs on your local network. Select one, and Beats will play through it.

Regrettably, the Mac OS doesn't give you an option to send AirPlay audio to multiple destinations (although you can transmit audio to multiple destinations with iTunes). You can, however, use Rogue Amoeba's \$25 Airfoil for Mac (rogueamoeba.com/airfoil) for the job. Simply launch the app, choose your Web browser as the audio source, and then select any AirPlay destinations you want to stream to.

A Beats app is available for compatible iOS devices. With it and a subscription to the service, you can not only stream music over Wi-Fi or a cellular network, but also download tracks for offline listening. With a reasonably modern iOS device, you can stream its audio using AirPlay as well. Or you could stream Beats via Bluetooth. (For more on Apple and Beats, see *Playlist* on page 82.) ■

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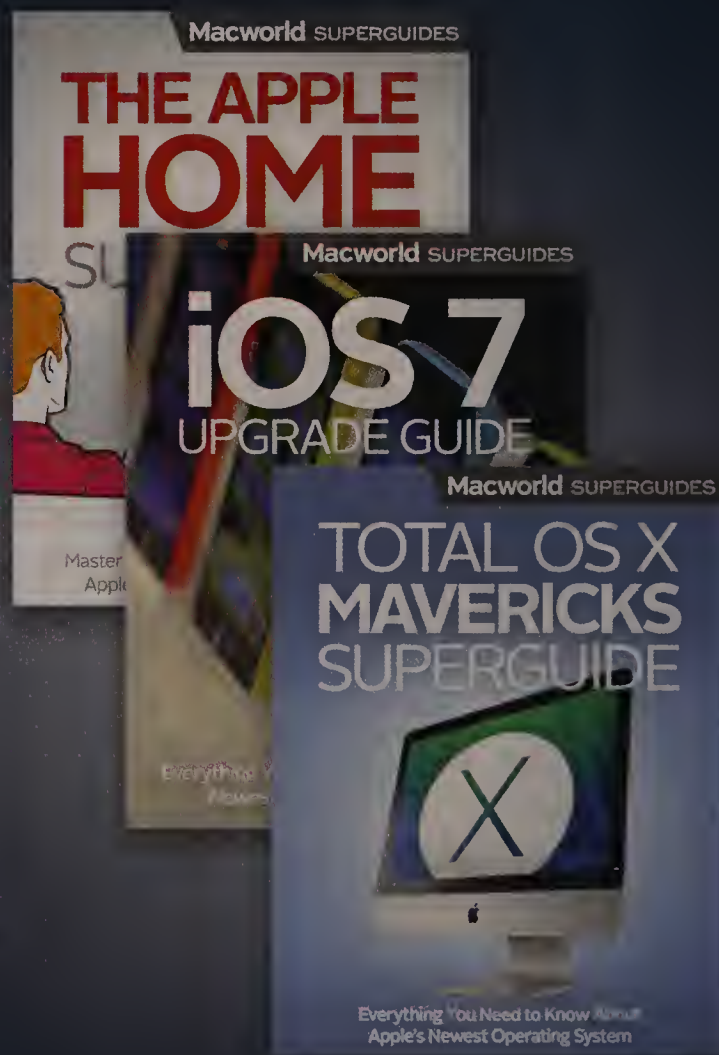
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SEATTLE



Ellen Chisa

Product manager, Kickstarter

WHAT DO YOU DO?

I work on the backer experience for Kickstarter. I try to make everyone else's job easier.

WHAT HARDWARE DO YOU USE?

I use a **13-inch MacBook Air**—the size just feels right for me. And I prefer the way the keyboard feels. I never use an external monitor because the amount of screen space overwhelms me.

I've never been much of a tablet person. If I'm on a computer, I want to be productive. But I have a **Microsoft Surface RT** in the kitchen that I use to pull up recipes while I'm cooking.

Right now I use an **iPhone 5s**. For a couple of years, I worked on **Windows Phone** and carried an **HTC 8X**. After dropping and shattering two within a year, I decided it was time for something else.

AND WHAT SOFTWARE?

My favorite software is **FuzzyClock**. I also use **f.lux**, which helps prevent me from staying up all night.

Most of what I do is on the Internet. **Chrome** is my primary browser. I also use a Chrome extension called **Web Timer**, which informs me that I spend nearly two hours per day in **Gmail**. My second-most-used website is **Twitter**.

For product management, I use **Trello**. I use it to keep myself organized, too. I have one board that has columns for each type of thing I do: Web stuff, writing, art.

I also use **Google Docs** to make notes, and **Balsamiq** to make mockups. Sometimes I'll use **Photoshop** to modify something more detailed. I use **Sublime Text** if I'm editing code, and **GitHub** or **Terminal** to check things in. We use **Campfire** to keep up with each other during the day.

My writing process uses different tools. I draft everything in **Day One** because it feels like a journal, plus I can read the notes in the **iOS app** while I'm out. I copy-paste everything into **Hemingway** to edit. Then I either move it into my blog, which uses **WordPress** or to **Medium**.

A few other favorite things: **Pinterest** for procrastinating, **Spotify** for listening to music, **Pocket** for saving articles I'll probably never read, **Goodreads** for documenting books that I do read, and **Product Hunt** for doing research on cool new stuff.

WHAT IS YOUR DREAM SETUP?

This will sound funny, but I wish I had a PC to run **PowerPoint** on. **Office for Mac** isn't the same.

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